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1 IN THE DISTRICT COURT FOR CLEVELAND COUNTY
2 STATE OF OKLAHOMA

3 THE STATE OF OKLAHOMA, ET AL,

4 Plaintiffs,

5 vs.

CASE NO. CL-96-4199-L

6 R.J. REYNOLDS TOBACCO COMPANY,
7 ET AL,

8 Defendants.

9

10 DEPOSITION OF: THOMAS E. HAMM, JR., DVM, PH.D.

11 DATE: October 28, 1998

12 TIME: 9:33 a.m.

13 LOCATION: Womble, Carlyle, Sandridge & Rice
14 150 Fayetteville Street Mall
15 Suite 2100
16 Raleigh, NC

17 TAKEN BY: Counsel for Plaintiffs

18 REPORTED BY: LISA A. JOHNSON,
19 Registered Professional Reporter

20

21

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NOV - 2 1998

RECORDED AND INDEXED

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12 THOMAS E. HAMM, JR., DVM, PH.D.:13 DEBEVOISE & PLIMPTON
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20 (INDEX AT REAR OF TRANSCRIPT)

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LAWYER'S NOTES

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1 (Commencing at approximately 9:33 a.m.)

11 THOMAS E. HAMM, JR., DVM, PH.D.

12 being first duly sworn, testified as follows:

EXAMINATION

14 BY MR. MIGLIORI:

15 Q. Good morning, Dr. Hamm. My name is
16 Donald Migliori. I'm from the law firm of Ness,
17 Motley, Loadholt, Richardson & Poole, and we
18 represent the State of Oklahoma in this matter. I
19 understand that counsel has a statement before we
20 proceed.

21 MR. MERRITT: Yes. For the record, my
22 name is Bruce Merritt of the firm of Debevoise &
23 Plimpton. We represent the defendant, the Counsel
24 for Tobacco Research, and I'm also here representing
25 the witness. And I just wanted to make a statement

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1 for the record that in the event that there are any
2 documents of a privileged nature or to which
3 privilege is being claimed that are being used in
4 this deposition, I'm not going to instruct the
5 witness not to testify with respect to them, but I
6 will object to the use of such documents to preserve
7 the privilege. And I want to make a standing
8 objection to any -- to the use of privileged
9 documents in the event that I don't recognize them
10 as -- as privileged. But, as I said, I otherwise --
11 subject to that objection you may examine the
12 witness with regard to them.

13 MR. MIGLIORI: Okay.

14 (Off-the-record conference.)

15 VIDEOGRAPHER: We're going off the
16 record at 9:34.

17 (Off-the-record conference.)

18 VIDEOGRAPHER: We're going back on the
19 record at 9:36.

20 BY MR. MIGLIORI:

21 Q. Good morning, Dr. Hamm. I understand
22 that the first deposition that you've ever provided
23 or deposition statement you've ever given was back
24 in March of 1997, is that correct?

25 A. My expert report was written earlier

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1 than that, and I don't know exactly the date of when
2 it was provided, but that's approximately the date.

3 Q. Okay. The first time that you ever
4 gave a deposition statement though, was that in the
5 action -- the Attorney General action in
6 Mississippi?

7 A. Yes. The first time I was deposed was
8 by your firm.

9 Q. Okay. And that was back March 28th,
10 1997?

11 A. I'll agree to that date. I don't know
12 what the date was.

13 Q. Since then you've had a few -- quite a
14 few opportunities to give deposition statements, is
15 that correct?

16 A. I've been deposed four more times --

17 Q. Okay.

18 A. -- I believe.

19 Q. You're getting old hat with this, but
20 I just want to go over some basic ground rules.
21 Essentially I'm going to ask you several questions
22 this afternoon and this morning. If you at any time
23 don't understand any of my questions, please stop me
24 and I'll try to clarify them for you. If you don't
25 stop me and you provide me with an answer, I'm going

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1 to assume that you've understood my question. Is
2 that okay?

3 A. That's fine.

4 Q. Okay. And the other stipulation or
5 concern I have is not for me so much as for the
6 stenographer. Please allow me to ask the question
7 in its entirety before you offer an answer and also
8 give your attorney an opportunity to interpose an
9 objection if he may have one. This allows for the
10 stenographer to take down all the information
11 clearly. And every answer must be fully
12 articulated. Gestures aren't recorded. Although we
13 do have a video camera here today, we do also have a
14 stenographer, so if you can verbalize all of your
15 answers, it would be appreciated. Do you have any
16 questions before we begin?

17 A. No, I don't.

18 Q. Okay. Dr. Hamm, you said that you
19 gave four other depositions other than the
20 Mississippi action, is that correct?

21 A. I believe that's correct.

22 Q. Okay. In -- do you recall which
23 depositions they were? You provided a deposition in
24 June of 1997 in the Broin matter?

25 A. Yeah. I won't be able to tell you the

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1 dates.

2 Q. Okay.

3 A. But I -- I have been deposed in the
4 Broin case. I've been deposed in the Arch/Barnes.
5 I've been deposed in Engle, and I've been deposed in
6 Minnesota.

7 Q. Okay. In those five cases did you
8 only provide deposition testimony as opposed to
9 trial testimony?

10 A. That's correct.

11 Q. So as of today you have never
12 testified at trial in any litigation?

13 A. That's correct.

14 Q. Going back to the deposition in
15 Mississippi. Did you have an opportunity to review
16 that deposition before today?

17 A. I have looked at it again. It's
18 pretty long though, so I'm not real conversant on
19 every aspect of it, but I have looked at it again.

20 Q. Okay. When did you review that?

21 A. Approximately a week ago.

22 Q. How about your other deposition
23 testimony, did you review the Broin testimony in
24 preparation for today?

25 A. No, I didn't review any of the other

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1 depositions.

2 Q. Okay. Is the sum and substance of
3 your testimony and opinions that you intend to offer
4 in the Oklahoma action the same as that which you
5 provided to -- or in the Mississippi tobacco action?

6 A. They're essentially the same, and
7 you'll notice my expert report is essentially the
8 same. The only difference would be is I've -- I've
9 read more things and been involved in this a little
10 longer so -- but it's essentially the same.

11 Q. So since March of 1997 you've read
12 more things. What else have you read?

13 A. Well, as a scientist I continue to
14 read the literature, and there is a list that we've
15 provided to you of the major things that have
16 influenced my positions. Among those things that
17 have happened since, I believe -- I'm not exactly
18 certain of the dates, but I think since that
19 deposition Drs. Henry and Kouri and -- and others
20 have been deposed, and I've read those depositions
21 and those are listed in my list. I've also read a
22 number of other depositions in -- in other trials
23 and I've read trial testimony, so I've read the
24 entire trial testimony of the Minnesota case.

25 Q. Okay. If I understand you correctly,

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1 the documents that you've read since March of 1997
2 have all been identified in the disclosure that you
3 provided for this action?

4 A. That's correct. As well as the ones
5 I've mentioned, there are some notebooks that I
6 have, and those have all been provided and -- and
7 any article that I read that's relevant to these
8 matters is in those note -- notebooks. But I also
9 read a number of other articles that may be
10 peripherally involved but not directly involved.
11 And I -- I don't list every single thing I've read
12 because there's many things I read that I don't
13 think are really directly related to this action.

14 Q. Okay. How much of the material that
15 you've read since March of 1997 has been provided to
16 you by attorneys for the tobacco industry?

17 A. As far as physically getting it to me,
18 the majority of it has been. And I don't know what
19 percentage I have requested and what percentage
20 they've sent without my requesting it. Well, in a
21 sense I've requested all of it because they make me
22 aware of what's available and I say, yes, I'd like
23 to see this, that or -- or the other thing. In
24 volume it's mostly been provided in that way because
25 in volume a lot of the depositions, and trial

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1 testimony and all that take up a lot of volume
2 compared to a scientific paper. And then I go to
3 the library and get papers myself and some papers
4 are sent to me. Some I can't get at the library and
5 I request them to get them for me. So I don't know
6 the exact percentages if that's important.

7 Q. You said that they make you aware of
8 what's available. Who is they?

9 A. I've been a consultant for Shook,
10 Hardy & Bacon since 1992, and I work most directly
11 with Vicki Thompson and she's the one who usually
12 contacts me. And then they come visit me a couple
13 of times a year and -- and -- and at those meetings
14 they say, well, this trial we have these looked at,
15 do you think you'd like to look at any of them
16 and -- and then if I do, they send them to me.

17 Q. Do they ever --

18 A. They call me on occasion as well, so
19 it isn't always at a meeting. They call me and --
20 and we do the same thing over the phone.

21 Q. Do they ever tell you this is
22 something we want you to read as opposed to making
23 things available to you for you to decide?

24 A. It's been more this is what's
25 available, what -- what do you think you would be

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1 interested in.

2 Q. Have there been any documents that
3 they said we want you to understand this material,
4 please read it?

5 A. Well --

6 MR. MERRITT: Are we talking about
7 since March of '97?

8 MR. MIGLIORI: Yeah.

9 BY MR. MIGLIORI:

10 Q. Well, let me clarify that point.
11 Thank you. You provided testimony in March of '97
12 for the Mississippi Attorney General action
13 describing how your relationship with Shook, Hardy
14 began and what you did between 1992 and March of
15 1997. Do you recall that testimony?

16 A. Yes, I do.

17 Q. And in your view for today of that
18 testimony did you notice any discrepancies or
19 inaccuracies in your testimony for the Mississippi
20 action with relationship to the -- how your -- your
21 relationship developed between 1992 and March of
22 '97?

23 A. No, I -- I didn't and -- and I had a
24 chance to correct that deposition, so my corrections
25 were sent in as well. So I -- I don't think there's

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1 anything in that deposition that -- that isn't
2 correct. And I was going to say that -- that since
3 '97 the majority of work has been here's what's
4 available, do you want to see it. But as I said in
5 my earlier deposition, I believe between '92 and '97
6 the relationship was much different. I was a
7 consultant then and they used to frequently send me
8 things and say we'd like to get your opinion on
9 this -- on this article, and that relationship has
10 kind of changed. Plus at this point I've read so
11 many articles that it's sort of how many more can
12 you read. So in general it's we have this new
13 information, are you -- do you have the time and
14 would you be interested in reading it.

15 Q. Okay. And you've used a couple
16 qualifiers, and I don't want to belabor this too
17 much, but you've said in general and you've said the
18 majority. I'm just trying to get a sense were there
19 any documents that they specifically said since
20 March of 1997 we want you to understand and absorb
21 this document?

22 A. I don't think so. And the reason I
23 used the qualifiers is because as a scientist I -- I
24 realize there's -- there's always an exception. So
25 there may be, but as I'm sitting here thinking about

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1 it, I can't think of any article where they've said
2 here's one we want you to absorb and understand.

3 Q. Okay. As a lawyer I understand the
4 use of qualifiers in different contexts.

5 A. Well, it's difficult to say
6 anything's --

7 Q. Sure.

8 A. -- absolute because it's possible over
9 the years -- I mean, they've sent me boxes and boxes
10 of things. It's possible a few of those articles
11 were ones where they just said what you've -- what
12 you've said, but I can't think of any that were
13 under that circumstance.

14 Q. Okay. And throughout the course of
15 today all I'm looking for is to get your present
16 memory and best understanding as of today. I'm not
17 trying to pin you down to absolutes. With regard to
18 the materials that you've seen since March of 1997
19 how much -- and reviewed for purposes of this
20 litigation in Oklahoma, how much of it has been
21 tobacco industry related? And when I say that, I
22 mean tobacco documents, industry documents.

23 A. I would say very little. The main way
24 I've been exposed to industry documents is in
25 depositions, but outside of depositions my review

1 has not been -- well, it depends if you're
2 concluding CTR as -- as industry, which you may be
3 in -- in one way of thinking about it. I have read
4 a tremendous amount of CTR documents so I've read
5 boxes and boxes of their documents. And I've read
6 quite a few documents from Micro -- Microbiological
7 Associates and quite a few documents that were
8 generated by -- by Homberger and so forth. But as
9 far as any documents generated by any of the major
10 tobacco companies, I have seen -- I don't think I've
11 seen -- again, I can't make an absolute, but I've
12 seen very few of those with regards to my work with
13 Shook, Hardy & Bacon. I've seen those mostly when I
14 was being deposed. In Minnesota particularly they
15 gave you a huge amount of industry documents that
16 you were supposed to read before the deposition
17 and -- and I did read those. But other than that --
18 other than in depositions I've seen very few. And
19 that hasn't been the focus of my work to look at
20 anything internal to the companies. I've been
21 looking at the CTR program particularly.

22 Q. Focusing on CTR documents. Have you
23 reviewed CTR documents since March of 1997 that you
24 had not seen prior to your deposition in the
25 Mississippi action?

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1 A. Only in -- I've re-reviewed some of
2 them, but I haven't seen -- in fact, I haven't
3 gotten, as far as I know, any new documents since
4 that time. So the documents I had I had prior to
5 that deposition. And I have gone back and
6 re-reviewed certain of them because it's difficult
7 to keep all this in my mind, so I have to go back on
8 occasion and re-review them.

9 Q. And we'll go into that in a little
10 more detail later. But as your best memory today,
11 you don't think that you've reviewed any
12 CTR documents or -- I'm going to say MAI from now
13 on -- but Microbiological Associates, Inc.,
14 documents, any new ones since March of 1997?

15 A. I don't believe I have partially
16 because I had essentially, I think, every document
17 that was available on the issue that I've been
18 examining at that time.

19 Q. Okay. Let's define that now. What --
20 what is the issue and what was the issue in March of
21 1997 that you are examining?

22 A. I'm not --

23 MR. MERRITT: General -- generally or
24 with respect to Microbiological and CTR?

25 MR. MIGLIORI: Well, that's -- he used

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1 the expression, that's not what I'm examining, and
2 I -- and I want to understand what his understanding
3 is as we sit here of his role in whatever context he
4 just answered the prior question.

5 A. I'm -- I'm a laboratory animal
6 veterinarian, and my expertise is in animal models.
7 And beginning in '92 when I first began to work for
8 Shook, Hardy & Bacon, my role has been to examine
9 particularly animal-based experiments and determine
10 whether they've been done properly. As I moved
11 along into it, then other questions came up about
12 specific aspects of CTR or specific aspects of MAI
13 and so forth, so I've looked into those aspects of
14 the -- the documents and so forth.

15 Q. When you say other aspects, are you
16 still referring to aspects as they relate to animal
17 models and animal research?

18 A. The majority -- that's my area of
19 expertise, so the majority of what I look at is --
20 and -- and I should make that plain that with MAI
21 and CTR, while I have examined other parts of what
22 they did because it puts me in the context of the
23 animal work, I've focused on mainly animal work. I
24 haven't really gone into any depth in the -- the
25 human studies they were doing and so forth. And

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1 when I said earlier that I had most of the documents
2 that existed, I mean most of the documents relating
3 to animal-based research.

4 Q. Okay.

5 A. Because that's plenty. I -- I really
6 couldn't do much more even if I had that extra
7 expertise.

8 Q. Do you know today how much of
9 CTR-sponsored research was animal work and how much
10 was other types of research?

11 A. That's actually kind of an unknowable
12 answer because you could look at it a variety of
13 ways, and I haven't looked at it either way. But
14 you could look at it based on total dollars, or you
15 could look at it on total grants or you could look
16 at it on total number of publications. That's a
17 question we frequently get even at universities and
18 there's no way to answer that question as -- as what
19 the percentage was, and I haven't looked at it that
20 way.

21 Q. Do you know what the total dollars
22 were for animal research at CTR?

23 A. I don't -- no, I haven't looked at
24 total dollars. I know that certain aspects of it
25 were in the millions just for particular contracts

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1 and so forth, and I have seen the -- all the billing
2 records and so forth, but I've never looked at it
3 from the standpoint of -- of total dollars.

4 Q. Have you looked at it from the
5 standpoint of total grants?

6 A. I don't understand that question.

7 Q. It was a distinction that you made
8 initially. You -- you said that you could -- it's
9 an unknowable answer because you can look at it in
10 terms of total dollars, total grants or total
11 publications. And so I'm just asking you whether
12 you, in fact, have ever determined, given those
13 three types of approaches that you provided, whether
14 you've ever checked into --

15 A. No, I've never --

16 Q. -- any of them?

17 A. -- attempted to determine what percent
18 the animal work represented regardless of the
19 measure that's being used. So I -- I don't know. I
20 do know there was a very extensive program and a lot
21 of animal work went on. You'd have trouble, though,
22 if you say animal work because as well as the
23 contracts, most of the grants had animal work and
24 some had -- that's where you really get into trouble
25 because you give a certain amount of money for a

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1 grant and there may be animal work in there, but
2 it's very difficult to assign a percentage to it.

3 Q. How about then in terms of MAI, do you
4 know what percentage of CTR-sponsored funding went
5 to MAI research?

6 A. No, I don't.

7 Q. Do you have a conception of whether or
8 not it was a majority of its funding, whether it was
9 a small percentage?

10 A. MAI had a very large percentage of the
11 contract dollars and it went into many millions of
12 dollars. I could make a rough calculation, but it
13 would be pretty meaningless for all the reasons I
14 just stated. It doesn't -- it's a significant -- a
15 very significant amount of money, and it was a
16 significant portion -- the MAI contract itself was a
17 very significant portion of the budget during the
18 years those studies were being conducted. But --
19 but beyond that I can't give you a real percentage.

20 Q. You said it was a large percentage of
21 the contract dollars. And I assume that you're
22 distinguishing that from grant and aid dollars?

23 A. That's correct.

24 Q. Was there any grant money or grant
25 sponsorship of MAI research?

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1 A. I didn't go into that in real detail,
2 but I believe all the contractors also had grants
3 and -- and it was very -- you know, you'd have to
4 spend a lot of time to get all that out. But all
5 the contractors had some grants.

6 Q. When you say some grants, are you
7 saying from CTR or --

8 A. Uh-huh.

9 Q. Okay. Did they have grants from other
10 sources as well?

11 A. Yes. MAI was a major contract
12 laboratory at that time and they had -- they had
13 sponsorship from a variety of places.

14 Q. When I'm talk -- and when I refer to
15 MAI though, I'm specifically referring about the
16 research that it engaged in through its relationship
17 with CTR.

18 A. Okay.

19 Q. And in that sense do you have any
20 sense or -- or any idea of how much grant money was
21 provided by CTR to MAI?

22 A. I don't know the total and it -- it
23 was in the realm of 20, \$25 Million over the period
24 of time for basically just the work that's in the
25 Blue Book. They had a number of other contracts

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1 that I don't -- I don't really know the dollar
2 value.

3 Q. Okay.

4 A. And so the total value may have
5 been -- this is just a guess, but in the range of 50
6 Million over the period of the time they worked
7 there. But that's just a guess.

8 Q. So you haven't really looked into with
9 any specificity how much of CTR's sponsored research
10 percentagewise went -- went to MAI?

11 A. On a percentage basis?

12 Q. On any basis.

13 A. On any basis? Well, I've seen, again,
14 all the billing records and I know it's in -- it's
15 in the millions. The Blue Book alone is -- the
16 single project is in the 13 to \$14 Million range, so
17 I know it was a very significant amount of money.
18 But I've never looked at it from what was the exact
19 amount or what percent was it of the budget. It was
20 a significant percent of the budget at the -- the
21 time period those contracts were in place, but
22 that's about the best I can do.

23 Q. Okay. So is it fair to say that since
24 March of 1997 the documents that you've looked at
25 have mostly been documents -- the new documents

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1 you've looked at have mostly been documents or
2 studies in your field of expertise, new studies
3 or --

4 A. Well, they -- they have been mostly in
5 my field of expertise, but I've also seen documents
6 that have a variety of fields of expertise in them
7 where I tend to hone in on my field of expertise so
8 the documents are never completely just animal
9 oriented. And then I've had to see -- look at a lot
10 of trial documents and so forth to understand the
11 basis of the Complaints in each case and so forth.
12 And those, again, are -- hit a variety of -- of
13 subjects and I -- once again, I've tended -- I've
14 read them in -- in their entirety, but I've tended
15 to focus on the animal based parts of them because
16 that's where my expertise lies.

17 Q. Is the converse true that you don't
18 consider yourself an expert in the nonanimal-based
19 studies?

20 A. I'm a scientist and I have some
21 limited expertise in -- in scientific matters, but
22 my -- my -- the basis of my expertise is I'm a
23 laboratory animal veterinarian that works on animal
24 models.

25 Q. Okay. Are you an expert in

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1 epidemiology?

2 A. No.

3 Q. Do you consider yourself an expert in
4 oncology?

5 A. No.

6 Q. Do you consider --

7 A. Although I have -- I have done a large
8 body of work on carcinogenesis testing and I -- I do
9 have more expertise in oncology than I do in many
10 other areas. So I have done a lot of work in that
11 area.

12 Q. And when you say carcinogenesis
13 testing, you're talking about the models for the
14 testing, correct?

15 A. Well --

16 Q. That's your expertise in the --

17 A. In the testing as well. I was in
18 charge -- at two times in my career I have been in
19 charge of doing the testing, so I was in charge of
20 all the people who worked on it. But my major
21 expertise is the animal models. And, in fact, most
22 of that testing is done in animal models so it
23 isn't -- you don't usually do any of that with a
24 human model. It is an animal model oriented type of
25 research.

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1 Q. And I assume whenever we refer to
2 animal models throughout the day, we're specifically
3 referring to nonhuman animal models?

4 A. That's fair.

5 Q. Okay.

6 A. I usually think of it that way,
7 although, probably 50 percent of research is done in
8 humans. And so you could view it the other way, but
9 I -- I generally view it the way you've just
10 expressed it.

11 Q. I was making the same assumption until
12 you made the last comment. I just wanted to make
13 sure we were on the same page. Okay. What is
14 comparative pathology?

15 A. Well, comparative pathology is the --
16 is a branch of pathology where you study all animals
17 including humans. So that's one where we don't --
18 we do consider the human another animal and we study
19 the pathology of all animals. And that's sort of
20 the basis of animal modeling is you can't really
21 animal model unless you know something about the
22 human that you're modeling for. And so what we
23 attempt to do is create models that will be useful
24 for studying human diseases. And comparative
25 pathology simply is -- is the pathology of all

1 animals including humans.

2 Q. Okay. When you study comparative
3 pathology -- in fact, you have an advanced degree in
4 comparative pathology, correct?

5 A. That's correct. My Ph.D. is in
6 comparative pathology.

7 Q. But you're not a pathologist per se,
8 are you?

9 A. Well, it's kind of a difficult
10 explanation. My Ph.D. is in comparative pathology
11 and I have worked at times in my career as a
12 pathologist, so early in my career I was the
13 veterinary pathologist for the organization that I
14 was working for. But I've -- my career has -- I've
15 become an administrator so I haven't worked
16 specifically in -- in pathology for many years now.
17 But to say someone is or isn't a pathol -- I'm not
18 board certified in pathology, for example, and I
19 wouldn't consider myself competent to read a set of
20 slides for a -- for a sophisticated experiment. I
21 have other people do that work for me. But I'm
22 trained in pathology and I can tell when that person
23 gives me the results whether he knows what he's
24 doing or not. So I guess that's about as good as I
25 can explain it. But I don't sell myself and I don't

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1 function as and I don't work as a pathologist per se
2 and I haven't for many years.

3 Q. And correct me if I'm wrong, and
4 I'm -- I'm not trying to -- I'm just trying to
5 understand, you don't consider yourself qualified to
6 read pathology slides and make a diagnosis, if you
7 will; however, you do consider yourself qualified as
8 an expert to take the information provided by
9 somebody who can read those slides and decide
10 whether or not it's a meaningful -- meaningful in
11 some other sense?

12 A. That's correct. And -- and I'm -- I'm
13 conservative in that many people are not qualified
14 to read particularly animal slides and give answers
15 like they give but they may not tell you that. I'm
16 a very conservative person. And I -- I have special
17 training in comparative pathology, so it's more
18 than -- the average laboratory animal veterinarian
19 doesn't have a Ph.D. in comparative pathology so I'm
20 better able than most of my peers to understand the
21 pathology involved in an experiment. And that's
22 important for what I do because pathology and animal
23 modeling are very intertwined. They're almost the
24 same thing. But there's a difference between
25 someone who works as an -- I work more as an

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1 experimental pathologist, and that's very different
2 than the person who works reading slides day in and
3 day out.

4 Q. Okay. When you say you're better than
5 your peers, you're talking about other
6 veterinarians?

7 A. Other laboratory animal veterinarians.

8 Q. Okay. You're not talking about better
9 than your peers in terms of pathologists?

10 A. No. There -- there's also a board --
11 I'm board certified in laboratory animal medicine.
12 There's also a board certification in veterinary
13 pathology.

14 Q. Are you board certified in vet --

15 A. I'm not -- I'm not board certified
16 there, and those people are the ones who really
17 should read animal-based slides.

18 Q. Okay.

19 A. Because those -- that's where the
20 expertise lies is in the -- that group. And even
21 within that group most of them are not qualified to
22 read a carcinogenesis study. There's a subspecialty
23 of pathologists who are called the toxicologic
24 pathologists who do that kind of work, and those are
25 the ones who really have the expertise to -- to read

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1 those slides and they do it even better than the
2 board certified pathologists who, for instance, work
3 at the veterinary college or work in other aspects
4 of the field.

5 Q. And I assume based on the fact that
6 you're not a board certified veterinary pathologist
7 that you're also not board certified in the
8 toxicology --

9 A. I'm not.

10 Q. -- subspecialty?

11 A. I've worked as a toxicologist and I
12 probably could be board -- I mean, I could take the
13 board and probably pass it, and I probably shouldn't
14 put that in writing because the only way to find out
15 is to do it, but I've never felt like I needed two
16 boards. I've got a board and I've never felt like I
17 needed that other board. But I have worked
18 extensively in toxicology.

19 Q. Okay.

20 A. And I have special expertise there
21 more than as a pathologist so I'm -- I know more
22 about toxicology than I do about pathology.

23 Q. Okay. And then more than you would in
24 terms of toxicology/pathology? What was the
25 subspecialty that you referred to? What was the

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1 title of that?

2 A. The toxicologic pathologists.

3 Q. Okay.

4 A. If you have a toxicologic pathologist,
5 that's the person who can read slides in like a
6 pharmaceutical company or -- or doing a
7 carcinogenesis test and that's -- there's only about
8 maybe 100 of them in the world.

9 Q. Okay. You describe yourself as an
10 administrator now. What does that mean?

11 A. Actually, it's better than that. I
12 retired from my academic job in July, and I'm a
13 retired person now.

14 Q. So now you're a retired --

15 A. So I've got time to drive to
16 Cincinnati and go down all those back roads; whereas
17 ordinarily I would have flown in and taken the red
18 eye out so -- but as a laboratory animal
19 veterinarian our job is to make sure that all
20 animals used at an organization are used humanely
21 and follow all the laws, and rules and regulations
22 and so forth. And that's a large part of what I was
23 doing in my academic role was making sure that all
24 the projects at the whole university are using the
25 right model, they're using the fewest animals and so

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1 forth. And so -- and then as well I did research.
2 All academic people do research, teaching and
3 service. My service role was to make sure
4 everybody's animal work was done properly. My
5 research -- I had a research program where I -- and
6 I don't know whether I want to delve into that or
7 not. I'll let you decide.

8 Q. Sure.

9 A. And my teaching program as well.

10 Q. Okay. You said many things there that
11 I want to ask you about but this is a slight
12 digression. You said that one of the things you do
13 when you go through and check other people's
14 research is to make sure they're using the fewest
15 animals possible, is that --

16 A. That's correct. There's a -- a kind
17 of rule that since you're -- these are all precious
18 creatures and you don't want to harm them
19 unnecessarily and so forth. And one of the rules,
20 it's called the three Rs, is to reduce the number of
21 animals to the lowest number possible, zero if
22 possible, if there's some other kind of test that
23 would suffice. But for many tests that we have, we
24 really don't have any other way to do it except in
25 animals.

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1 Q. But even in those tests where you have
2 no other tests except for those that -- that you can
3 do on animals, is it still optimal to reduce the
4 number of -- or minimize the number of animals used?

5 A. Well, from a humane standpoint you're
6 trying to use the minimum number, but from a
7 scientific standpoint you need the largest number
8 possible, and those two things have to be settled.
9 And, in fact, if you use too few animals, it's not
10 good science and by definition is sort of inhumane
11 because you've wasted animals. You've done a
12 project where you can't come up to a conclusion. So
13 sometimes when people submit a proposal, we would
14 tell them, no, you have to use more animals because
15 the number you've chosen, while it's great because
16 you're using very few, you're not using enough to --
17 to find an -- the scientific answer. You've got too
18 few animals to make any kind of a decision. So it's
19 complicated. But in general, and particularly when
20 you're thinking strictly from the scientific
21 standpoint, you want large numbers because the fewer
22 animals you have, the more likely you are to make a
23 mistake in your interpretation.

24 Q. Is it also true, though, that the more
25 animals you use, the more inhumane the project is?

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1 A. Not necessarily.

2 Q. Once you get past that threshold of
3 having enough animals to make the research
4 meaningful?

5 A. It depends on what you're doing. So
6 if you're not doing anything harmful to the animals,
7 the number doesn't matter. If you're doing
8 something that's very harmful to the animals, then
9 the -- if you use more than are necessary to find
10 the scientific answer, then you're -- you're --
11 you're in the area of -- of potentially being
12 inhumane.

13 Q. If -- what about if you're producing
14 or trying to produce tumors? You said it depends on
15 the --

16 A. The same -- the same question. Many
17 tumors are -- are -- are totally painless and many
18 animals with tumors suffered no -- just as many
19 humans with tumors suffer no pain. It depends where
20 the tumor is and the type of tumor so it's very
21 complex. And that's one of the things that I've
22 done for my career is I have to sit and decide for
23 every experiment how many we're going to allow. And
24 those are the kind of decisions that we have to
25 make. But if the -- the tumor isn't harm -- you

1 know, doesn't -- isn't painful, then it isn't as big
2 a problem as if the tumor's painful. And we even
3 have rules for how big a tumor can get, if it's
4 ulcerated and so forth. We have rules of what you
5 have to do to make sure the animal doesn't suffer.
6 So a very large tumor -- if you had a tumor -- in
7 the old days we used to have mice with tumors the
8 size of the mouse and this poor mouse would be
9 dragging around this gigantic tumor and so forth.
10 Well, that's not allowed anymore. We've -- we've
11 really realized -- and in modern times that would
12 not be allowed.

13 Q. Have you reviewed the MAI research
14 that's referred to in your disclosure with respect
15 to these issues of balancing the number of animals
16 used with the humanity of the project?

17 A. I have in a -- not -- not formally in
18 a sense, but I'm -- that's how I'm trained and I
19 think that way. And in the case of their
20 experiments at that time particularly, lots of the
21 things I've just expressed were not common
22 characteristics of -- of science. So I would say
23 particularly for rodents in -- in the -- those
24 studies were started in '78. There was very little
25 of this kind of thinking at that time. And the idea

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1 was -- the major limiting factor in those
2 experiments is the great cost. Those experiments
3 are tremendously expensive. And so you -- you
4 wanted to have the maximum number of animals that
5 you could afford to have. And so I would think at
6 that time there was less consideration of this than
7 there is in modern times. So at that time you could
8 do an experiment like that, in fact, without getting
9 approval of an outside committee. Today you'd have
10 to have an outside committee approve that project.
11 And if -- and if you sent it through ten committees,
12 I don't know how many would and wouldn't approve the
13 numbers. It's fortunate they use the very large
14 numbers they use because if they had not used those
15 very large numbers, they would have had a very
16 difficult time deciding anything at the end because
17 they had such a low incidence of tumors that if
18 they'd had a very small number of animals, the work
19 would not be the good piece of work that it is. It
20 would have had to be repeated. But because they
21 used the very large number of tumor -- of animals,
22 the work is -- is -- does answer the question.
23 Q. When you say a low incidence of
24 tumors, you're talking about a low incidence of
25 statistically significant tumors?

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1 A. No. I'm talking total. They had a
2 very low total incidence of -- they only had 19
3 tumors in the -- in the high -- in the exposed group
4 out of -- I forget the exact number of animals, of
5 thousands of animals. So the average bioassay at
6 that time only used 50 animals per group. Well, you
7 wouldn't have -- you might not have any tumors. You
8 might have had zero.

9 Q. Okay. So --

10 A. And they -- they partially determined
11 the large number of tumor -- large number of animals
12 based on their knowledge of the low incidence of
13 tumors that they -- they expected. So it's sort of
14 a -- it's a difficult question to answer and they'd
15 have difficulty today doing that experiment with
16 that large numbers unless they could scientifically
17 justify the reason for it, and that would be
18 possible because there's data to show that you have
19 to use that many animals to -- to get any -- any
20 number of tumors.

21 Q. So then today do you have an opinion
22 using today's standards whether or not the MIA
23 test -- MAI testing was humane? I'm not talking
24 about scientifically significant or meaningful but
25 humane.

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1 A. I believe it is from the standpoint of
2 the question was unknown and there was data to --
3 to -- to make it reasonable to use the large number
4 of animals. If you were to repeat the experiment
5 today, a committee would not allow you to because
6 the question has been answered unless you came up
7 with a new wrinkle on that study. So if that study
8 had never been done, it would have to be done to
9 answer the question. And it's an important
10 question. It has relevance to -- to humans. It has
11 all the -- if presented properly to a panel, I think
12 the panel would approve it, but I can't guarantee
13 that. Panels have their own way of doing things.
14 So if you submitted it to ten panels and you
15 submitted it properly, I think all ten would approve
16 it. But if you weren't careful in how you
17 approached it, if you were sloppy or cavalier, you
18 know, didn't address these issues, the average panel
19 today -- in fact, this -- this is a project that if
20 it went through a panel today would get extra
21 scrutiny compared to a project where very few
22 animals are being used. So the just the large
23 number of animals itself would cause this to have a
24 lot of extra scrutiny, but I think it would pass for
25 the reasons I've said, if it had never been done.

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1 Q. When you say that they'd have to be
2 careful and not cavalier, you're talking
3 specifically about presenting the proposal in such a
4 way that it showed concern for the humanity of the
5 animals or the --

6 A. Right.

7 Q. -- the proper treatment of animals?

8 A. They'd have to demonstrate that they'd
9 made -- that they'd thought of these things and they
10 had a scientific -- justifiable important scientific
11 reason for overriding these -- these concerns.

12 Q. Okay. I am going to show you what's
13 been provided to us as your -- I apologize. I only
14 have one copy. I'm going to call this Hamm Exhibit
15 1.

16 (PLF. EXH. 1 was marked for
17 identification.)

18 BY MR. MIGLIORI:

19 Q. Thank you. Dr. Hamm, take a moment to
20 look at this and tell me if you recognize it.

21 A. Yes, I recognize this.

22 Q. Okay. Do you recognize this as being
23 your submission in the Oklahoma action for the list
24 of reliance materials?

25 A. Yes. That's what this is.

1 Q. Okay. Who prepared this document?
2 And let me -- that's not a perfect question because
3 I understand and recognize that the first page is a
4 letter to our office from the office of Thompson,
5 Coburn, so I under -- that's excluding the
6 correspondence on the front sheet?

7 A. Okay. Yeah. I had nothing to do with
8 it.

9 MR. MERRITT: It's from Thompson,
10 Coburn to your office.

11 MR. MIGLIORI: That's what I -- yeah.

12 MR. MERRITT: I thought you said the
13 other way.

14 MR. MIGLIORI: Oh, I'm sorry.

15 A. I -- yeah. I've never even seen -- or
16 if I've seen I didn't pay any attention to the cover
17 sheet so I had nothing to do with the cover sheet.
18 This sheet -- what we've done through -- throughout
19 my appearing in these depositions is when we first
20 began to work in this we began to keep a list of --
21 of the -- all the materials I've been sent and a
22 list of the materials that I considered that I was
23 principally relying on. And then we've continued to
24 update this each time we've needed to submit it
25 again. And I've worked mostly with, again, Vicki

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1 Thompson at Shook, Hardy & Bacon who has done the
2 typing, and the revising and so forth and the
3 shipping it off to you. And --

4 Q. Let me go through it.

5 A. I think that pretty adequately
6 explains the process.

7 Q. So this is -- this is a document
8 that's been refined since you got involved with
9 Shook, Hardy & Bacon in 1992 and reflects the
10 documents you've principally relied upon in forming
11 your opinions with regard to the tobacco litigation?

12 A. That's correct.

13 Q. Okay.

14 A. We always start each time with the
15 previous one and -- and then I work -- she and I are
16 constantly keeping it updated as we go because
17 that's much more simple than trying to figure it
18 out.

19 Q. And this one's dated September 29,
20 1998. So this is the most current one that you've
21 seen?

22 A. That's correct.

23 Q. Okay. The --

24 A. Now I should say I'm listed in several
25 other cases. It's possible that there's a -- but

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1 even if there is, it's not changed in any
2 significant way from this.

3 Q. Let me deal with that issue then.
4 Before we get into this document let me deal with
5 that issue now. To your knowledge on whose behalf
6 are you testifying or expected to testify as an
7 expert in the Oklahoma Attorney General action?

8 A. I'm being employed by Shook, Hardy &
9 Bacon.

10 Q. Okay. When you say you're being
11 employed, you are employed as a consultant for
12 Shook, Hardy & Bacon?

13 A. That's correct.

14 Q. And you receive your compensation from
15 Shook, Hardy & Bacon?

16 A. That's correct.

17 Q. And today Attorney Bruce Merritt has
18 indicated that he's here on behalf of CTR and as
19 your counsel?

20 A. That's correct.

21 Q. Do you understand that to be true
22 today?

23 A. That's true today.

24 Q. Okay. Do you understand that Attorney
25 Merritt is not from the law firm of Shook, Hardy &

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1 Bacon?

2 A. I do.

3 Q. Have you dealt with other lawyers
4 besides Mr. Merritt and Vicki Thompson from either
5 Shook, Hardy & Bacon or any other law firm involved
6 in the litigation?

7 A. And -- and Vicki isn't technically a
8 lawyer but she ought to be.

9 Q. I'm sure she'll be happy to hear that.

10 A. I hope she reads that because she
11 really does a fantastic job. But I've worked with a
12 number of lawyers all from Shook, Hardy & Bacon, and
13 Bruce is the only lawyer outside of Shook, Hardy &
14 Bacon although Bruce brought one of his colleagues
15 with him to one meeting a couple of years ago and
16 his name was Ricky -- I only met him one time. I
17 don't remember his name from -- from his firm.

18 MR. MERRITT: Ricky Diwan probably.

19 THE WITNESS: Yeah.

20 BY MR. MIGLIORI:

21 Q. Okay.

22 A. Other than that I've -- I've only
23 worked with lawyers from Shook, Hardy & Bacon. I've
24 worked with several from that firm.

25 Q. Okay. Do you know on whose behalf

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1 you're expected or intending to offer expert
2 testimony in terms of defendants in this action?

3 A. I've seen the list of expert witnesses
4 and which companies, but I don't remember and I
5 don't -- I view I'm working for Shook, Hardy & Bacon
6 and whomever they want me to appear for I'm willing
7 to appear for.

8 Q. Do you know who Shook, Hardy & Bacon
9 represents in the litigation?

10 A. They represent a number of the tobacco
11 companies, Liggett being one of them, I believe.
12 I've seen all that, but I don't pay much attention
13 to it. I don't know specifically which companies.

14 Q. Okay. You think they represent
15 Liggett and you think they represent other --

16 A. They represent a number of tobacco
17 companies, I believe, but I -- I don't know that.
18 Bruce represents CTR and -- and a lot of what I've
19 been doing has been related to CTR so Bruce has been
20 at a number of meetings that I've had.

21 Q. Do you consider yourself to be an
22 expert who will offer testimony in this action on
23 behalf of CTR?

24 A. I'm going to offer testimony based on
25 what I've presented and CTR is part of that. That's

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1 the main thing that I've looked at, and the
2 animal-based research is the major thing that I've
3 been working on. But I'll probably be -- if I do
4 offer testimony, I'll probably be asked other
5 questions, and I'm prepared to try to answer any
6 question I'm asked.

7 Q. Okay. I'm not so much concerned --
8 your disclosure says that you're going to be talking
9 quite a bit about CTR. I'm asking you very
10 specifically whether you consider yourself to be
11 offering evidence -- or offering testimony on behalf
12 of CTR.

13 A. And this may be kind of a semantic way
14 of looking at things, but I view myself as an expert
15 consultant whose -- and now an expert witness who
16 will offer testimony on these matters. Irregardless
17 of who my sponsor is or irregardless of who's paying
18 me, I'm going to offer the same -- same answers
19 based on what I read.

20 Q. So as you sit here today, you do not
21 know whether you're being offered as an expert on
22 behalf of CTR?

23 A. I don't know -- technically I don't
24 know if that's an important distinction. I have
25 been sent all of the documentation of which expert

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1 witnesses and so forth, but I haven't looked at it
2 because I don't -- I just don't view myself that
3 way.

4 Q. Okay.

5 A. But I definitely am -- have looked at
6 a lot of the CTR animal-based research and that's
7 the testimony that I principally am going to offer.

8 Q. Okay. So your services are being
9 provided to Shook, Hardy & Bacon as far as you're
10 concerned?

11 A. Well, they're -- they're the ones that
12 meet with me and they're the ones that pay me, and
13 I've never met with anybody else and I've never been
14 paid by anybody else. So I view it, yes, that is
15 the person who's -- who's -- I'm working with.

16 Q. Okay. And when you say you've never,
17 you're excluding the times you've met with -- with
18 Mr. Merritt, correct?

19 A. Even those times that was in
20 conjunction with Shook, Hardy & Bacon.

21 Q. So you've always had somebody from
22 Shook, Hardy & Bacon involved with any kind of
23 discussions or meetings relative to the tobacco
24 litigation?

25 A. I've --

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1 Q. There's always been some member of
2 Shook, Hardy & Bacon involved?

3 A. I believe that's the case. There were
4 a few occasions where they all had to catch a plane
5 early and Bruce and I got to talk without them
6 actually being there. But other than that it's --
7 it's -- I viewed it that I'm working with Shook,
8 Hardy & Bacon.

9 Q. Okay. Do you know whether Shook,
10 Hardy & Bacon is reimbursed for any expenses that
11 they pay for your services?

12 A. I assume they're reimbursed for 100
13 percent of my expenses, plus they get paid for doing
14 it. So they are being paid by the tobacco
15 companies.

16 Q. Do you know who is reimbursing Shook,
17 Hardy & Bacon for your services in this litigation?

18 A. I have no idea.

19 Q. Have you ever asked?

20 A. No.

21 Q. Does it matter to you?

22 A. No.

23 Q. Generally speaking, does it matter
24 when you review a science -- when you review any
25 kind of science research who funds the research?

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1 A. No. In fact, I try very hard not to
2 let the source of funding influence me in any way.

3 Q. Do you think the source of funding is
4 relevant at all in research with respect to making a
5 decision as to the significance or the
6 meaningfulness of that research?

7 A. I think it should not be. I think
8 that science should be done in a way that -- that
9 you come out with the same answer regardless of the
10 source of funding, and we're trained that way. Now
11 that isn't always the case, of course, because we're
12 human. But I believe that the source of funding
13 should not influence any of your decisions including
14 I don't think you're doing your sponsor any favor by
15 attempting to do that because you're not helping a
16 sponsor by giving them an answer they want to have
17 if it's not the right answer. So I view as a
18 scientist your job is to provide the data to the
19 best of your ability. It's up to other people to
20 decide what to do with that data, how to interpret
21 that data and what to do next and so forth.

22 Q. Is it your testimony that sponsors
23 only seek data that is all those things that you
24 described, honest, truthful, unbiased?

25 A. Well, just as I said, since all

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1 scientists aren't perfect, I don't believe all
2 sponsors are perfect. But a good sponsor, anyone
3 who's thought about it, it doesn't do you any good
4 to sponsor science where all you want is the answer
5 you already believe. What's the point? Save the
6 money and just decide that's the way it is already.
7 But if you -- but people are people. So there are
8 always people who have some interest in things
9 turning out the way they'd like them to turn out.
10 But that, if you think about it, doesn't do you any
11 good. I mean, if you've got the wrong information
12 even if it fits what you already believe, you're at
13 a disadvantage of having the right information.

14 Q. Have you yourself applied for
15 sponsorship for research projects?

16 A. The only sponsorship I've ever had --
17 well, I've got to be careful here because I haven't
18 worked at academic institutions. I've had -- I
19 worked for the chemical industry and had chemical
20 industry sponsorship for 100 percent of my work at
21 one time. But in -- my academic roles through the
22 years the -- all my sponsorship has been from the
23 government. But the government has its own agendas
24 and which even influences the type of funding. So
25 all sponsors potentially can have a bias and it's

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1 the -- the duty of all scientists to try to avoid
2 these biases to the extent they can because you're
3 not even doing your sponsor any good if you don't
4 give them good data.

5 Q. When you're applying for sponsorship
6 from the government or from whomever, in the process
7 of application aren't you, in fact, very conscious
8 of whether or not that sponsor does have a bias?

9 A. That's a -- that's a difficult
10 question because it has a lot of ifs. But you don't
11 always know. As a human being you -- you
12 generally -- just as today I assumed you -- before I
13 knew better that you were from Charleston because of
14 your firm. And so we make these assumptions. But
15 usually probably we don't know. I think people make
16 assumptions that certain things are so. They may or
17 may not be so.

18 Q. Do --

19 A. I found that very striking when I was
20 in the chem -- when I worked for the Chemical
21 Institute of Toxicology. My biases and -- and ideas
22 of how the chemical industry worked proved not to be
23 true. I assumed they wanted this answer or that
24 answer, and I was very refreshed to find out they
25 wanted -- they didn't. They wanted us to do good

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1 research and then they'd deal with the answers.

2 Q. We had a short discussion about the
3 humanity of the MAI project and whether or not today
4 that would be -- that would be approved based on the
5 humanity standards. And during that discussion I
6 believe it was your testimony that you'd have to
7 carefully put together that proposal in order to
8 address certain issues of humanity, is that correct?

9 A. That's correct.

10 Q. So when you go through that process,
11 you're con -- you're aware of the fact that in order
12 to be approved for what you want to do as a
13 scientist you have to make sure that your
14 application is tailored to the concerns of the
15 people that are going to be receiving it? In that
16 context it would have been outside committees to
17 review the humanity of the project.

18 A. Right. In that context I agree with
19 you. As you asked your question earlier, it was
20 more in the context of are you aware of the biases
21 and so forth. It would --

22 Q. That's what -- and I --

23 A. It would depend on how you interpret
24 the biases. So definitely there's a thing called
25 grantsmanship that we also have to practice. And so

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1 if you're going to get a grant from a certain
2 individual, you certainly would attempt to play to
3 the strengths of what you -- you think that
4 particular sponsor would like -- would like to see
5 done.

6 Q. Is that also true for contract
7 research? I don't know that you would use the term
8 grantsmanship for contract research but --

9 A. Yeah. No, you wouldn't. Contract
10 research is very different in that in general -- and
11 I have to say in general because there's all kinds
12 of contracts. But in general a research contract --
13 the sponsor sets out very specifically what he wants
14 to do and then you -- you try to explain to him can
15 you -- are you or are you not capable of doing it
16 better than someone else; whereas, in a grant you're
17 more -- you have free reign to stay within a certain
18 area because the cancer institute isn't going to
19 fund diabetes research unless you can relate it to
20 cancer somehow. And that's the grantsmanship. So
21 in a grant you -- you would have to make those kinds
22 of decisions of what are they funding, why are they
23 funding it and so forth and come up with an idea
24 that fits within their -- their sphere. A contract
25 generally you would get spelled out very

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1 specifically A, B, C, D, here's what we want you to
2 do and sometimes they're very specific. And then
3 you come back and say, okay, we have the
4 capabilities to do this and so it's a very different
5 mechanism. There is no grantsmanship -- well, there
6 is in a sense contractsmanship because you have
7 to -- you're trying to convince them that you're
8 better able to do this contract than anybody else.
9 But it's a little different in that you're not so
10 much telling them new ideas and thoughts as you're
11 telling them things about your staff, and about your
12 facilities and about your ability to -- things
13 you've done in the past and so forth.

14 Q. Is it fair to say that the grant
15 process in terms of setting up the parameters of the
16 research is driven more by the scientist seeking the
17 grant; whereas, in a contract situation it's the
18 person extending the contract to the researcher that
19 has control over the scope of the research?

20 A. In general terms, yes. A contract is
21 generally very specified and you do certain things.
22 That's not always true. And a grant you're given
23 more latitude but even in grants there's a lot of
24 specificity. So they'll say we're interested in
25 grants to study childhood leukemia and so you're --

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1 you're bound by the area somewhat. So even a grant
2 you're not totally free. Now there are some grants
3 where you can just apply -- you can just put any
4 idea you want, but those are kind of in the
5 minority. As -- as we continue to become more
6 micromanaged as a society there's more and more
7 management of where does every dollar go and so
8 forth which actually scientists are against because
9 that's probably -- the more you control science
10 probably the less good science you get.

11 Q. And when you say you control, you're
12 talking about the sponsor?

13 A. The sponsor.

14 Q. So based on that definition would it
15 be your testimony that the grant-sponsored research
16 has less restriction than contract research?

17 A. In general that's correct. But there
18 are all kinds of grants and there are all kinds of
19 contracts.

20 Q. Okay. But as a general observation
21 that's true?

22 A. In general that is the major
23 difference -- one of the major differences between
24 grants and contracts.

25 Q. And in all of scientific research with

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1 which you're familiar would you say that there is
2 more, whether you do it by percentage, or contracts
3 or by -- would you say that there are -- there are
4 more grant sponsored research projects out there
5 than contract research?

6 A. It's another one of those unknowables
7 because we'd have to set up -- you could do it by
8 dollars. You could do it by -- you know, there's a
9 lot of ways you could look at it, and it varies over
10 time and it varies from sponsor to sponsor and it
11 varies within those sponsors over time. But what
12 scientists would prefer to do is grant research and
13 generally do contract research when they can't do
14 contract research. So in general scientists are
15 always trying to push it towards more grant research
16 and the government and sponsors are always trying to
17 push it towards more contract research.

18 Q. Why is that?

19 A. Normal human nature, I think.

20 Q. They want more control over it?

21 A. I've been on both sides of it. I -- I
22 administered contracts when I was at the cancer
23 institute and at CIIT and your problem as a sponsor
24 is if you say to the world go do good things and
25 give me answers, it may have nothing to do with what

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1 you're interested in. And so as you begin to put
2 constraints upon it, you may get to a certain
3 activity that you would like to have an answer that
4 really can't even be done in a grant. And so, for
5 example, we wanted to test compounds to see whether
6 they caused cancer. That's hard to do in a grant,
7 and we -- we probably have spent a lot of money and
8 got very little back. But with a contract we can
9 say exactly here's the number of animals we want you
10 to use, here's the day we want, here's the chemical
11 we want and so forth and so we can control it to get
12 the exact answer that we were interested in getting.

13 Q. And in that context when you say we,
14 you're not talking about we as scientists, you're
15 talking about we as sponsors?

16 A. As sponsors.

17 Q. Okay.

18 A. At that point while I was at the
19 cancer institute we did all of our work outside of
20 the cancer institute at contract labs all under the
21 mechanism of contracts, so it was work we wanted to
22 do that we couldn't do ourselves so we contracted
23 other people to do it.

24 Q. Is that -- is there a relationship
25 between contract work and target research? It's a

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1 term that you've used in your disclosure.

2 A. They are -- targeted research could
3 either be grant or contract. You could target it
4 either way because you can say, well, here's a bunch
5 of money that we're going to let you have and X
6 percent will be grants but we're only going to
7 accept grants that work on a specific targeted
8 thing. So targeted doesn't necessarily imply -- but
9 the more you get to be a contract, the more tar --
10 you just -- it's a higher form of targeting. You're
11 targeting it to the extreme and you're micromanaging
12 it more.

13 Q. So it can be targeted as a grant, but
14 that's just in the sense that it might have some
15 restrictions on it?

16 A. Yeah.

17 Q. The more -- the more it resembles --
18 or -- or contract research almost by definition
19 would be targeted research?

20 A. That's correct.

21 Q. In your review of the CTR documents
22 and the MAI documents did you observe any examples
23 of grantsmanship?

24 A. Yes. There's always -- that's how
25 they ended up being the grantee. I didn't see all

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1 of the people who applied, but I did see their work
2 and there's always -- in those documents there's
3 always grantsmanship.

4 Q. As you sit here today can you tell me
5 what examples come to mind with respect to
6 CTR-sponsored research?

7 A. I can't because I really wasn't
8 looking at it in that respect. So I'm -- I'm
9 acknowledging that you're undoubtedly right that
10 there was some grantsmanship in there because
11 they're always is in a grant or a contract, but I
12 can't give you any specific examples.

13 Q. How about -- and this is your term,
14 contractsmanship, it's hard for me to say, did you
15 notice any examples of that in your review of the
16 CTR documents or the -- and/or the --

17 A. Well --

18 Q. -- the MAI documents?

19 A. The -- the -- I'm going to have to
20 answer this in kind of an oblique way. The contract
21 that MAI had was different than contracts -- many
22 contracts in that MAI was -- was not just selected
23 because they were the best able to do this contract.
24 They were also selected because they had many ideas
25 of how to do this contract. So MAI had a number of

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1 things that they added to the -- to the project.
2 They weren't simply -- at that same time I had
3 contracts from the cancer institute with MAI and we
4 told them very specifically which food they could
5 use and where they could buy it and which animal
6 they could use and where they could buy it. MAI in
7 the contract because of their expertise was allowed
8 to -- to propose that this is what we believe we
9 should do.

10 Q. Are you talking now about -- as --
11 with respect to CTR or with respect to your work in
12 the toxicology --

13 A. No. I'm sorry. I didn't mean to
14 confuse you. The work that we -- the contracts that
15 we gave them, they were allowed no -- no thinking.

16 MR. MERRITT: When you say we, meaning
17 the can --

18 A. The cancer institute.

19 Q. Okay.

20 A. But the CTR contract, it was still a
21 contract and it still had specific contractual
22 elements to it, but they were also -- which was --
23 which was good, they were saying, you have a lot of
24 expertise, you tell us what things you'd like to
25 change and so forth and how you'd improve it and so

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1 forth and we'll -- we'll -- we'll decide whether
2 we'll let you do that or not. That's what the
3 cancer institute should have been doing, but we were
4 also constrained by rules of how you can let
5 contracts in the government. So if we let a
6 contract with somebody and said, okay, now let's
7 change the contract, we'd have been in court. So
8 they were less -- the CTR could -- could act in a --
9 in a better manner because they weren't constrained.
10 They could lock -- they could award their contracts
11 to whomever they want and they could modify them as
12 needed so those contracts were modified. So in a
13 sense I'd call that contractsmanship because MAI was
14 always coming in, well, gee, we'd like to do this,
15 we'd like to do that, da-da, da-da, da-da and it
16 costs this and try to talk the sponsor into
17 sponsoring that. But I don't want to imply that
18 grantsmanship or contractsmanship is in any way a
19 bad thing. It's -- it's -- you're trying to get the
20 contract, get the grant and -- and -- and in this
21 case they were attempting to improve and I think did
22 substantially improve the process compared to the
23 way the cancer institute was doing it at that time.
24 We just said, here's the way to do it, A, B, C, D
25 and send us the results. CTR was saying here's what

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1 we'd like to do and you have special expertise. You
2 help tell us some of the things you'd like to do.
3 But in a contract -- what you're trying to do as a
4 contractor there is get to do as many things as you
5 can possibly do.

6 Q. What documents are you relying upon or
7 what information are you relying upon to say that
8 CTR said to MAI not only do we think you're the most
9 qualified to do this but we think that you have good
10 ideas that we need to -- we need to explore?

11 A. It's -- I read all the internal
12 documents of Microbiological Associates on -- on
13 this -- these contracts and I read all the CTR
14 internal documents including all the memos, annual
15 reports, quarterly reports where they were
16 developing this project. And throughout that they
17 had conferences. They had retreats. They had
18 all -- the scientists came and said here's, you
19 know, the work to date and so forth and so I'm
20 referring to that. Now I'm making -- I didn't find
21 a piece of paper that said in so many words what
22 I've expressed to you, but that's the -- the -- what
23 I got out of all of these documents going back and
24 forth. C -- the Microbiological Associates had much
25 more -- for instance, they determined which mouse --

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1 they determined which animal they would use. They
2 determined which mouse they would use. They
3 determined a lot of things that weren't part of the
4 contract until they said here's what we want to do
5 and here's how much it costs and then CTR said,
6 okay, we agree. We think it's a good idea and we're
7 going to fund it.

8 Q. As you sit here today -- well, first
9 of all, before I do that, these -- these references
10 you're making to MAI telling CTR these are the
11 mouse -- this is the mouse that we want to use and
12 this is the materials that we want to use, are those
13 all after the contract was formed? And let -- I
14 can --

15 A. That's a dif -- it's sort of a timing
16 thing. They had contracts with MAI and they were
17 constantly modifying them I think is a better way to
18 look at it. They had a contract to do work and they
19 were modifying that contract based on new
20 information and new things that were being proposed.
21 And I guess that's where I see it as probably it's
22 the same mechanism, it's just spread out over time.
23 And at the cancer institute we said at the
24 beginning, here's the contract, don't change
25 anything, we're not going to listen to any changes,

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1 do it. This contract was, we have a contract but
2 we're going to -- we're going to modify the contract
3 as we go based on -- and that's a good way to do
4 research because you never can tell what's going to
5 happen. So it's good to have an interactive thing
6 like that where you can modify it as needed to -- to
7 keep progressing.

8 Q. But the ultimate decision about
9 modifying the contract was CTR's, correct?

10 A. Yes, definitely.

11 Q. They had the last say on these
12 suggestions?

13 A. They controlled the money.

14 Q. And they controlled the research?

15 A. Right.

16 Q. So if MAI went to CTR and said we want
17 to use this particular mouse, CTR could have said
18 no?

19 A. That's the -- that's the whole way a
20 contract works, yeah.

21 Q. And that's how it worked between CTR
22 and MAI?

23 A. That's the way it worked.

24 Q. Do you know any examples -- as you sit
25 here today can you remember or do you know whether

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1 there are any examples of suggestions or proposals
2 that MAI made to CTR with respect to its research
3 that CTR said no, we don't accept that, we don't
4 want to do that, we don't want to make that
5 modification?

6 A. I -- I can't give you specific
7 examples, but I'm sure there are many of those
8 because MAI was attempting to do hundreds of things.
9 So they were constantly asking for more money to do
10 more things. And I'm certain while I didn't -- I
11 followed the main stream of the contract. I didn't
12 follow all the other things. I'm certain there were
13 times probably when they said no, we don't have
14 enough money to do every possible project you can
15 ever dream up. So MAI was constantly attempting
16 to -- to get more work, and I'm certain there are
17 instances, but I can't sitting here today give you
18 any specific ones. And I don't know of any that
19 were of any real importance to the contracts I was
20 looking at. So the contracts I was looking at were
21 pretty much MAI was getting everything they asked
22 for until they ended up with a negative study. And
23 then they decided not to do any more studies so in
24 that case they -- if you're looking at it that way,
25 the entire contract was finally terminated so --

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1 Q. Where would you find that information?
2 Where would you go to if you wanted to find out what
3 suggestions were made by MAI to CTR that CTR
4 ultimately rejected?

5 A. Well, there's -- in -- in those
6 documents from CTR to MAI and the documents from MAI
7 to CTR there are quarterly reports from MAI,
8 hundreds of them. Well, maybe not hundreds because
9 there weren't that many quarters. It's going to be
10 fun if you go try and do it because none of those
11 documents are in sequential order or -- and they're
12 not in -- by -- by date and there's multiple copies.
13 I mean, you'll hit the same thing 50 times. So it
14 isn't a very good set of records. It's difficult to
15 go through them all. But you will see quarterly
16 reports where they asked for money and they asked --
17 they asked to get paid and they asked for here's
18 some new things that we'd like to do. And then you
19 could look at and try to determine which of these
20 things actually did get done and -- and those would
21 be the ones that they said no. There may even be
22 memos that say no, but I -- I don't sitting here
23 today remember if there were. There probably are
24 memos back to the quarterly reports that says go
25 ahead and do A, D and F and don't do this and that

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1 and the other.

2 Q. Did the --

3 A. But in general the main line of the --
4 of the experiment, they pretty much -- and that's
5 what was unusual for me looking at the contract was
6 MAI got most anything they asked for. Most anything
7 they proposed that's what was done in the -- in the
8 Blue Book. Most everything in there is something
9 MAI said here's what we'd like to do and they said
10 yes.

11 Q. As a consultant for Shook, Hardy &
12 Bacon though, you did not look at the research for
13 that purpose, to determine what suggestions were
14 made by MAI that were rejected by CTR?

15 A. I did for the -- the -- everything
16 that's in the Blue Book. And, as I've said, I can't
17 think of anything where they said no. And I did
18 that because those were the experiments I'm looking
19 at. But I'm talking about MAI was also doing human
20 work. MAI was also doing tissue culture work and I
21 didn't look at those and -- and so it could be in
22 those instances they said no. But in the
23 animal-based work until near the end when they
24 decided to stop the contract completely, I can't
25 think sitting here today of any instances -- I think

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1 they got just about everything that they asked for.

2 Q. How would you describe -- in whichever
3 relative terms best suit you, how would you describe
4 the nature of the control that CTR had over the MAI
5 research -- contract research as compared to other
6 types of contract research? Did you find that to be
7 highly restrictive, very -- minimally restrictive?

8 A. It's -- it's kind of difficult to
9 compare because the spectrum of -- of testing in
10 this kind of work goes from no oversight to
11 tremendous micromanagement. But it appeared to me
12 that they had a very good working relationship and
13 were working together as more or less like a team
14 and that Micro was sort of being really given a lot
15 of assistance to do whatever they needed to do.
16 There was some site visiting done, and those site
17 visit reports were in there they did which is a good
18 idea to send experts on occasion to see what's going
19 on and make sure everything's okay, and the reports
20 were real good coming back which wasn't true of some
21 of the other contracts. And so I would say they had
22 a good working relationship and it would be a matter
23 of opinion of how much oversight is really needed in
24 this kind of work. Fortunately Microbiological
25 Associates was a -- was one of the best places to do

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1 this kind of work at the time and had some of the
2 best people working in contract labs at that time
3 and probably needed a little less oversight than
4 some of the other -- we can mention Industrial
5 Biotech where the heads of that ended up going -- I
6 think they finally ended up in jail because they
7 were dry labbing all their experiments. So there
8 was a tremendous difference in contract labs. And
9 Micro has the reputation at that time and still to
10 this day that they were one of the best labs to do
11 this kind of work.

12 Q. Who from CTR did site inspections?

13 A. I don't sitting here today remember.
14 And I believe they even hired outside people who had
15 expertise, but I can't -- I've read so many of these
16 I can't remember, but I do know they were site
17 visiting all their contracts. And it probably was
18 the scientific director and it may have been
19 Sommers, although he came along as scientific
20 director slightly later, so I'm not certain that
21 he -- but it was -- and I can't sitting here today
22 remember who the scientific director was immediately
23 before Sommers. But it -- the staff at CTR had the
24 responsibility to monitor these things and monitor
25 the grants as well. So they visited grants as well

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1 which is -- which is sort of unusual. People do
2 visit grants at the funding stage, but you usually
3 don't visit them during the conduct of the work.
4 And I remember, I think, reading reports where they
5 did a little of that too. So I -- I would guess it
6 was the scientific director and/or he hired somebody
7 who had the expertise to go look.

8 Q. But you don't know as you sit here
9 today who did?

10 A. I can't remember.

11 Q. You don't know whether lawyers were
12 involved with the site inspections?

13 A. I -- I didn't look so much
14 specifically so I know on occasion -- again, on a
15 contract it wouldn't be unusual to take a lawyer
16 with you and while you're busy looking at the animal
17 room the lawyer's talking to the legal people about
18 the -- the problem. And there were lots of problems
19 with the billings and they were asking for more
20 money than they were supposed to get and all those
21 kind of contractual issues. But as -- but I was
22 looking more at the scientific side, and I remember
23 it was scientists just looking and writing reports
24 about the -- the scientific side.

25 Q. Is that your understanding that the

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1 lawyers for -- involved with CTR were concerned
2 primarily with the contractual language?

3 MR. MERRITT: Object to the form of
4 the question.

5 A. I really don't have any way of --
6 again, I've read all these documents, but there --
7 there's no set of documents that's complete enough
8 to -- to be certain of -- of -- you know, no one
9 documented every single thing that went on. But in
10 the documents that I read I did not see anything
11 that looked inappropriate in any way to me. Lawyers
12 are involved in grants and contracts all the time.
13 And particularly when there's contractual issues,
14 that's what they're there for. And I didn't see
15 any -- any -- anything that to me as a scientist
16 looked like any kind of inappropriate behavior on --
17 on the part of anybody in -- in these contracts. It
18 looked to me like the usual sorts of things. What
19 made me feel confident looking at the -- the data
20 was that they were -- it wasn't everything was
21 hunky-dory and it wasn't that everything went
22 smoothly. And if you saw that, you'd worry that the
23 records weren't representative because these things
24 never go smoothly. But I can't remember today any
25 instance in the records where I saw where a lawyer

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1 was working on anything except the contractual
2 aspects of it. Could I suggest a break?

3 Q. That's fine.

4 MR. MERRITT: We've been going about
5 an hour and a half so --

6 MR. MIGLIORI: That's fine.

7 VIDEOGRAPHER: We're going off the
8 record at 10:57.

9 (A recess transpired.)

10 VIDEOGRAPHER: We're going back on the
11 record at 11:09.

12 BY MR. MIGLIORI:

13 Q. Okay. I am -- I said let me digress
14 for a minute, and I think we took about 45 minutes
15 and -- but I did want to talk to you about what's
16 been marked as Hamm Exhibit 1. And we'll probably
17 end up back in that other conversation in no time,
18 but for now looking at Page 2 which is the beginning
19 of -- of the reliance material, in the title it says
20 materials principally relied upon by Thomas E. Hamm,
21 Jr. Knowing that you use qualifiers as a scientist,
22 I want to understand what you mean by principally
23 and what else you might rely upon if it's not listed
24 here.

25 A. Well, as a scientist obviously I read

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1 a tremendous number of things. And we couldn't
2 possibly -- some directly related to this, some
3 indirectly related to this and some related in some
4 way that I might not even realize is related to
5 this. But we've taken all the things where I have
6 an ability to -- to answer a question about CTR, and
7 the animal work and so forth in this particular case
8 and -- and this is the complete list of those things
9 that I'm using to -- to -- to try to make those
10 answers. But realizing that I have a background
11 that goes well beyond this, most of which is listed
12 in my CV, but we've attempted to give you a list of
13 everything that we think has influenced any opinion
14 I might have in -- in this -- in this matter.

15 Q. Okay. So is it fair to say that there
16 is nothing that's not referenced in this list that
17 is a CTR document or a tobacco industry document
18 which -- upon which you intend to rely in offering
19 your testimony?

20 A. Only to the extent that someone might
21 ask me a question just as you today have asked me
22 questions about many other -- well, maybe those
23 documents are all -- they may all be on here. I
24 can't say for a certainty that -- that you won't ask
25 me a question and I might give you an answer based

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1 on a document that isn't in here. But this is
2 certainly 99.9999 percent and it's every one that we
3 can theoretically think of that should be on this
4 list. We're not trying to keep anything away from
5 you or -- or --

6 Q. Okay. And when you say we, you mean
7 you and Shook, Hardy & Bacon?

8 A. Well, they -- they've helped me
9 because obviously when we're putting this list
10 together I tell them these are the things and then
11 say, well, what about and then -- then I think
12 about, well, yeah, maybe that should be on here. So
13 we've made this as inclusive a list as we can and
14 they've helped me so it isn't just the work of one
15 person.

16 Q. But the we refers to you and Shook,
17 Hardy & Bacon?

18 A. That's correct.

19 Q. Okay. The very first entry on this
20 list of documents is the MA publications listed in
21 Appendix H of Dr. Glenn's letter to the Waxman
22 subcommittee. I assume when it says that the list
23 is attached that that's referring to all the
24 subsequent documents in this exhibit -- I'm sorry,
25 all the subsequent pages to this exhibit?

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1 A. That's correct. The list as attached
2 refers to this -- this list of publications.

3 Q. All right.

4 A. And that was just done -- we had the
5 list and it was difficult to figure out how to give
6 you the list other than this format so --

7 Q. Okay. So your list of documents that
8 you intend to rely upon is this one page, the second
9 page of this exhibit, which incorporates the
10 remaining pages with the title publications
11 resulting from CTR supported contract research with
12 Microbiological Associates, Inc., correct?

13 A. That's correct. Realizing that each
14 of these we could also have a list for the other --

15 Q. Right.

16 A. -- things on here too.

17 Q. I'll get into the notebooks as well.

18 A. Okay.

19 Q. But I just want to make sure that --
20 that -- that what's been attached as the list or the
21 appendix of -- of Dr. Glenn, this is verbatim
22 everything that Dr. Glenn attached or submitted to
23 the Waxman committee?

24 A. It's the Appendix H which would simply
25 be the list of all the publications.

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1 Q. Okay.

2 A. And that's what we -- and we've put
3 that in the -- in the -- on the front page there.

4 Q. Okay.

5 A. We could have left this just
6 Microbiological Associates publications. I mean,
7 this looks a little unusual because we don't have
8 another one of these for every one of these.

9 Q. No. I --

10 A. But we had the list and we thought
11 that was an easier way for you to figure out what it
12 is than anything we could think of and --

13 Q. And appropriately these are the --
14 what is attached as Appendix H are the publications
15 about which you intend to offer expert testimony? I
16 mean, these are -- these are the publications
17 resulting from the research between CTR and MAI?

18 A. Well, these as well as the other --
19 there are other publications in my notebooks and so
20 forth so I don't want to limit that I'm only going
21 to talk about -- but what these are are the
22 publications that resulted from that contract
23 research, and they're part of the body of
24 information that I'm -- that I've read and that I'm
25 prepared to talk about.

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1 Q. Okay. There are outside of those
2 listed in Appendix H publications resulting from the
3 CTR contracts with MAI, correct?

4 A. I'm sorry. Would you ask that again?

5 Q. Is this an exhaustive list of all
6 publications resulting from any research whatsoever
7 that came out of the relationship between CTR and
8 MAI?

9 A. No. This is the list simply from the
10 animal-based work that formed the -- the so-called
11 Blue Book.

12 Q. Okay.

13 A. And if you look in the Blue Book, a
14 very -- it may be the same, but a very similar list
15 of publications is in the Blue Book. So this
16 doesn't relate to everything that was done there,
17 although this is the major body of the work that was
18 done on the animal part. But there's also papers on
19 human studies and I -- I'd have to look at this
20 again to be careful. Some of those are probably in
21 here as well but this -- this is mostly from the
22 Blue Book.

23 Q. And your expertise is not in the human
24 studies; your expertise is in the animal studies?

25 A. That's correct. I'm not unable to

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1 interpret human studies because as a comparative
2 pathologist I always model towards the human, but
3 I'm not viewing my special expertise as being able
4 to tell you everything about a human.

5 Q. Okay.

6 A. I guess I should say too when I
7 reviewed all of this work I focused on the animal
8 work. I didn't focus on the cell culture work or
9 the human work.

10 Q. Okay.

11 A. Except to the extent that it somehow
12 overlapped or had some significance to this work.

13 Q. Okay. Dropping down to these
14 notebooks that you referred to, these are notebooks
15 that you put together?

16 A. Yes. When -- when I first became a
17 consultant, I already had a number of articles on
18 the issue of lung cancer in animals obviously
19 because that's one of the things that I've worked
20 on. And then as we've -- and most of those would
21 probably be in Volume 1, although some may be in
22 Volume 2. And then as -- as -- in '92 when they
23 began to send me articles on this issue, I included
24 any of those that were of any special sig -- that I
25 thought were of any significance into these

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1 notebooks. And we're up to Volume 3 now.

2 Q. Okay. These are studies performed by
3 other people that you have collected?

4 A. Yes. I would have to look. There may
5 be something in there from me, but I think they're
6 all from other people.

7 Q. And prior to 1992 you yourself didn't
8 do any smoke inhalation studies?

9 A. Even since 19 -- I have not in my
10 career done specifically any -- I've done inhalation
11 studies, but -- and I may have done them with
12 components of smoke because I've never really --
13 I've done a lot of chemicals and I've never really
14 studied to see whether any were in smoke or not
15 because there's a huge number in smoke, but I've
16 never done a specific experiment with -- thinking
17 about tobacco as an end point.

18 Q. At any point in your career?

19 A. At any point in my career.

20 Q. Okay. That was my second question.
21 So your expertise and your focus is on evaluating
22 the studies of others with respect to animal models
23 and smoke inhalation studies?

24 A. The way you've worded it I believe the
25 answer is yes.

1 Q. And how might it be no?

2 A. Well, it's -- to me you've worded it
3 very specifically. So if -- if, yes, it has to be
4 smoke, yes, it has to be inhalation and, yes, it has
5 to be somebody else than me evaluating them, then
6 that is correct. I have though done a lot of
7 inhalation work. I have done a lot of evaluating.
8 What I do a lot of is evaluating these kinds of
9 things for a whole variety of other compounds. But
10 I haven't -- the question you asked me -- the way
11 it's narrowly focused, I think the answer is yes.

12 Q. And it's narrowly focused that way
13 because it's tailored to this litigation. I
14 understand that you have a background in inhalation
15 studies and that you've reviewed lots of work in
16 your career, animal models, but specific to animal
17 models and smoke inhalation studies, your expertise
18 and the testimony you intend to offer is with
19 respect to other people's scientific research --

20 A. That --

21 Q. -- and not your own?

22 A. That's correct.

23 Q. Because you have never done any
24 yourself?

25 A. I've never done this experiment

1 specifically, but I've done all -- you know, I could
2 have done it. I don't know how to phrase that
3 exactly.

4 Q. Could have but didn't?

5 A. If we'd have stuck smoke in one of
6 these chambers, we would have done this experiment.

7 Q. And you never did that?

8 A. But we never did that because we --
9 you know, the published information we knew that
10 answer had already been made. Well, I should say
11 too perhaps my sponsors weren't interested in doing
12 that either, so it never came up. I never
13 consciously decided not to do it either.

14 Q. So your sponsors -- had your sponsors
15 approached you about doing smoke inhalation studies
16 with animal models, it's something that you may have
17 done or considered doing?

18 A. It's a real hypothetical because if I
19 had done the same research -- what you do when
20 you're asked to do a new compound is you first do
21 research to see what's already been done. I would
22 have found the Blue Book. I probably would have
23 decided we had the answer so there's no point in
24 doing this experiment unless we had some new
25 experiment to do that was different than what had

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1 already -- if someone came and said to me today,
2 would you give smoke to a mouse to see what happens,
3 I'd say, well, here's the Blue Book. That question
4 has been answered.

5 Q. So in -- in -- as you sit here today,
6 in your opinion the answer has forever been found
7 that we cannot find an animal model or we cannot
8 create an animal model that tells us whether or not
9 smoking causes lung cancer?

10 A. As a scientist I never say never. And
11 every possible experiment hasn't been done, plus
12 we're always getting new information. So I would
13 never say that never would I do that. But it would
14 be very unlikely that we'd do this experiment again
15 to try to determine something like that when this
16 very high quality experiment has already given us an
17 answer that it's very unlikely that we're going to
18 be successful. So you'd have a prioritization of
19 resources. And -- and to do this experiment again,
20 it cost something like 13 Million to do in the 80s,
21 it would cost -- if we -- if we just wanted to
22 repeat this, it would cost us in the 20s of millions
23 of dollars with a -- very unlikely that we're going
24 to have any success. So you probably would say, no,
25 that's not a good use of resources. And, in fact,

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1 what you'd do is you'd probably -- this kind of --
2 in fact, I'm at the point where I think this kind
3 of -- of testing is not going to lead to the kind of
4 answers that we want, that it would be better to
5 spend the money on basic research.

6 Q. It was -- you said \$13 Million. Over
7 how many years?

8 A. And 13 Million is just one of the
9 estimates. It's difficult to know the exact number
10 because I didn't go through and just add it up, but
11 it's in the range of that for the time period when
12 the studies started in the late 70s until the early
13 80s. We think that a -- a carcinogenesis bioassay,
14 which is a much smaller type of experiment, that
15 cost half a Million in the 80s and probably costs a
16 Million to do today, and it's a much smaller
17 experiment. So you're talking many millions of
18 dollars. And this was such a definitive study and
19 well-done study -- now if this study had not been so
20 well done, you might say, well, it's worth
21 determining if we change this or change that could
22 we come up with another answer. So it would be an
23 unusual thing that anybody would spend the resources
24 to do this study again because this is such a good
25 study and the answer is, no, it doesn't -- you don't

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1 get a model.

2 Q. Throughout the 80s do you know how
3 much each tobacco company -- member company of CTR
4 paid in annual dues to CTR?

5 A. I can't -- I don't. I've read it
6 because I think in some of the trial testimony or
7 maybe the sidebar, somewhere in the Minnesota case
8 that kind of information was presented somewhere,
9 but I -- that's not my area of expertise and I
10 really don't know.

11 Q. Do you know what CTR's annual budget
12 was throughout the 1980s?

13 A. I've read the annual reports and each
14 one gives the budget on the front page, but I --
15 it's up to -- close to 300 Million now, but I think
16 it was -- I don't know.

17 Q. Okay.

18 A. If you want a pure guess, it was in
19 the 20 Million or 30 Million area.

20 MR. MERRITT: I don't think he wants
21 you to guess.

22 A. Because I -- I -- I know where that
23 information is, but I -- I don't know what it is
24 sitting here today.

25 Q. Do you know how much the tobacco

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1 industry pays in marketing annually?

2 A. No. Again, I've seen people talk
3 about that, but that's not something that I -- I
4 remember.

5 Q. Okay.

6 A. I would like to say though that it
7 isn't just a matter of money either. You could
8 spend -- it's -- it's like Nixon made the same
9 mistake with his war on cancer thinking if you throw
10 lots of money at something you can come up with the
11 answer. Science really doesn't work that way. So
12 even if I had unlimited amount of money, I think
13 there would be other -- other higher priority
14 research projects than this one because we have such
15 a good study which definitively says don't waste
16 your money here anymore.

17 Q. So you don't think it's likely that
18 there will ever be an animal model that shows
19 that -- or that produces tumors based on smoke
20 inhalation?

21 A. Again, I never say never and -- and
22 there are many short-term models that are being used
23 to look at -- try to look at mechanism. And so
24 it's -- it depends on how you look at animal models.
25 Many animal studies are still being done. I -- I

1 think that this was such a definitive study that I
2 think that it's unlikely and -- and in comparison to
3 other good studies I think a very concerted effort
4 was made to develop a model and I think it failed.
5 So I think that it's very unlikely, but it would --
6 it would nevertheless be very useful because most
7 diseases are very difficult to study unless there is
8 a good animal model. And if somebody gets a good
9 idea, I hope it's funded.

10 Q. I want you to assume that the MI --
11 the MAI research program was, in fact, positive.
12 Would scientists then have continued with that
13 research to try to replicate the results? Is that
14 good science? Is that worth the financial
15 resources?

16 A. It's -- it's -- it's -- there's some
17 qualities of your question that I'll have to modify
18 a little in that to say it's positive, if it's -- if
19 it's slightly positive, that would be different than
20 if -- but let's say if it's a very strong positive,
21 we had a very strong positive animal model, then
22 lots of people would have used it. You would see
23 all kinds of people today using it because it would
24 be a -- it would be a very good model to have. And
25 the reason you don't see that is because no one's

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1 been able to create one.

2 Q. Aside --

3 A. So it would be a good thing. And --
4 and I hope people -- if there were a way to do it,
5 if there was a good idea, somebody would be working
6 on it today. But -- but there -- the people that
7 have tried made a very concerted effort and did all
8 the right things and -- and failed.

9 Q. So -- well, when did this effort
10 cease?

11 MR. MERRITT: I'm going to object
12 because I don't know what you mean by this effort.
13 BY MR. MIGLIORI:

14 Q. Well, those were your terms. You --
15 you said that these -- and I assume you're talking
16 about MAI, they tried and they weren't able to
17 produce the model. When did they stop trying?

18 A. The contract was canceled in about
19 1980.

20 Q. Okay. In 1980 -- from 1980 on has
21 anyone else ever tried to come up with a model?

22 A. I don't know that anyone has done a
23 long-term assay of this type, and I would think it's
24 unlikely because of the reasons I've just stated is
25 this is such a good, definitive study and that's

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1 typical of all chemicals. If you've got one real
2 good study like this, it's very unusual for anyone
3 to -- to try it again because if -- if you --
4 because of the resources. But there have been many
5 animal models used for short -- for other aspects
6 and to work on mechanism. So there -- there are
7 still many animals being used to study many aspects
8 of tobacco and health. But I think people have
9 concluded that this study definitively says we're
10 not going to get a model in a rodent, and that's
11 what's really needed.

12 Q. Okay.

13 A. I hope -- I think -- I hope I didn't
14 wander from your question.

15 Q. No. No. You did fine. I -- I --
16 when you have a positive study in any area, when you
17 have a positive study, isn't it true that in science
18 one of the indicators that it's good science is when
19 those results can be duplicated or replicated?

20 A. It -- it depends a lot on the study.
21 This study is less important to replicate it and --
22 and it would have been replicated had it been --
23 there had been a bunch of things wrong with the
24 study that you could say there weren't enough
25 animals or there -- you know, you could go through a

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1 list of things that might have caused someone to
2 say, well, let's do it again to make sure that study
3 is correct. But in this area of study because it's
4 so expensive to do each of these, with almost all --
5 this is universal, not just smoke, but the chemicals
6 you're exposed to every day, if somebody does a
7 really definitive study, either positive or
8 negative, it's unusual for it to be replicated. So
9 the replication occurs more when a study has flaws.
10 So if there are a lot of flaws in it, it would have
11 been replicated. If this study had been positive,
12 then it would have been used by lots of people to
13 try -- because the other thing that happens is in a
14 positive study, then you begin to work on why is it
15 positive, and that's where very important work can
16 occur. So had this been positive, lots of people
17 would have been replicating it.

18 Q. Do you consider these small -- smaller
19 bioassays that you've referred to important in the
20 scientific process with respect to animal models and
21 smoke inhalation?

22 A. Yes. Theoretically and hopefully
23 every project that's done is important to science,
24 either that it will prove something does or doesn't
25 work --

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1 Q. Okay.

2 A. -- and will lead to the next step. So
3 these -- these shorter term things are very
4 important as well and -- and history will tell us
5 which ones were the most important so out there in
6 the future we'll know.

7 Q. To your knowledge did CTR conduct any
8 of these types of smaller bioassays after 1980 when
9 it canceled the contract with MAI?

10 A. Yeah. CTR has funded lots of -- of
11 studies using animals. And by small bioassays, I'm
12 talking about any -- any project using animals --

13 Q. I was --

14 A. -- to study health and cigarettes.

15 Q. I was referring to the one -- to the
16 one -- or I was referring to the ones to which you
17 were referring. Has -- are any of the ones that
18 have continued since then, are you -- are they CTR
19 sponsored?

20 A. Well, that's what I'm trying to say.
21 I was referring not to some kind of -- to -- a small
22 bioassay can be almost any experiment using an
23 animal. And they have funded a large number of
24 animal based -- because science is -- a lot of
25 research is animal based since that time, so every

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1 year since then they've funded a huge number of
2 grants to look at various aspects of tobacco and
3 health using animals. And those are all published
4 in the annual reports. But no one has done a
5 lifetime bio -- the distinction is no one has done a
6 lifetime bioassay because this lifetime bioassay
7 more or less says it's very unlikely that you'll be
8 successful. But not necessarily that you wouldn't
9 be successful because you could change -- you
10 could -- you could try different things, and that
11 doesn't mean you couldn't someday develop such a
12 model. But it's very, very unlikely.

13 Q. You've indicated that you have looked
14 at all the CTR annual reports from 1956 to 1997.
15 This, again, is in your document Hamm 1?

16 A. That's correct.

17 Q. Okay. And when you were looking
18 through the annual reports from '56 to '97 were you
19 just looking at animal research or animal-based
20 research?

21 A. I looked at everything, but obviously
22 we're talking thousands and thousands of articles
23 including -- I looked at some of the secondary
24 references so -- I don't know what the number would
25 be getting into. And my expertise is in animal

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1 based, so those are the articles that are more
2 interesting to me. So I probably looked at -- you
3 know, it would be -- those are the ones I looked at
4 more carefully. But I did look at who the authors
5 were, what journals they were published in because
6 prior to beginning this activity I didn't know very
7 much about CTR. And it was very interesting to me
8 to look at the wealth of information that they've
9 produced. So I looked at who the authors were, what
10 organizations they were associated with, what kinds
11 of -- of other funding did they have and so forth.
12 And -- but I did definitely notice the animal-based
13 information more. But it's a huge amount. I'm --
14 I'm -- sitting here today, I mean, it's a blur
15 because there's so much in there that I -- you know,
16 I can't tell you here's five from 1980 articles.
17 But there's a huge amount of animal-based research
18 as you'd expect because a lot of science is animal
19 based.

20 Q. You didn't review with any careful eye
21 the human research or other types of research? I
22 mean, your focus was primarily on the animal-based
23 research?

24 A. Yeah. Other than I did notice the
25 authors, and their organizations and where they

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1 published -- you know, their other funding and so
2 forth which gave me a feeling for what CTR was
3 doing, and why they were doing it and so forth. But
4 I didn't -- including even the animal-based work
5 since there didn't seem to be controversy on many of
6 the other animal experiments in there, I didn't
7 delve into any of them in any great detail. I was
8 just interested in -- in what they -- you know, what
9 they had published. I was surprised because many
10 articles in there -- I can't think of some offhand
11 because I know that will be your next question
12 but -- but there were many articles in there that I
13 was surprised they had been funded by CTR because
14 they're very famous articles in our field that have
15 influenced all of us. And it was surprising because
16 I -- I don't ordinarily when I read papers pay any
17 attention to the line where they say who funded them
18 and so forth. And so I was surprised how many were
19 funded by CTR.

20 Q. Did you know anything about CTR before
21 1992? Had you ever heard of CTR?

22 A. I -- I've tried to remember -- it's --
23 it's -- I knew very little, and that's embarrassing
24 to say when I see the wealth of things they've done
25 and I think that's the reason is I never paid

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1 attention to who was funding things. But I knew
2 very little. But, in fact, I probably got the Blue
3 Book. I've tried to search down my old -- I've
4 moved so many times it's hard to tell, but I
5 probably was sent that. I was at the cancer
6 institute -- no, I'd left the cancer institute. But
7 I was at CIIT at that time so they probably sent me
8 the Blue Book, but I don't remember that either, so
9 I don't remember knowing a lot about CTR. I never
10 got a grant from them and I don't -- I -- I know
11 many of the people who have grants for them so many
12 people at the universities I've worked at had grants
13 from CTR, but I don't remember ever discussing that
14 with anybody.

15 Q. Do you know anything about the
16 structure of CTR?

17 A. Well, I've looked at their -- I've
18 looked at their minutes. I have looked at their
19 annual reports. The structure of the organization
20 is -- is outlined in those reports. At depositions
21 I have seen various internal memos and so forth
22 talking about how the director was appointed and all
23 these kinds of things. So I -- I do know in general
24 something about the structure and I do know in
25 general something about how they operate.

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1 Q. And you referred to the selection of
2 the scientific director. Do you know when or how
3 CTR came to be, came into existence?

4 A. Yes, basically.

5 Q. What's your understanding?

6 A. Well, in '54 when the Frank statement
7 was promulgated, the Tobacco Industry Research Group
8 was formed by appointing Little -- Clarence Little
9 as the first head of it. He then created a
10 Scientific Advisory Board of prominent scientists
11 who then made decisions on -- and -- and then they
12 changed their name to CTR a few years later and
13 that's basically -- the -- the tobacco industry in
14 response to the skin painting experiments in mice
15 put out the Frank statement and then formed the
16 Tobacco Industry Research Group and turned it over
17 to Clarence Little to -- to administer.

18 Q. What -- what test are you referring to
19 with the mouse painting?

20 A. Wynder -- well, there were two things,
21 Doll epidemiology in about '53 and then Wynder in
22 '54. And I do remember that. Even as young as I
23 was at the time, the skin painting got unbelievable.
24 I don't remember the epidemiology, but I do for some
25 reason -- maybe I already was interested in animals.

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1 And then -- I don't remember the Frank statement
2 coming out. I was probably too young at the time,
3 but those two events -- now there were many other
4 events, but I think Doll's epidemiology and Wynder's
5 skin painting were the two things that got the
6 American public very -- very interested in this
7 issue and then -- and then that's what started
8 the -- the Frank statement and then the
9 organization.

10 Q. Do you know who selected Little?

11 A. I'm beginning to feel like President
12 Clinton now in what is to know. I don't remember
13 seeing how he was -- I think the -- the things I've
14 seen where he -- where they were selecting his
15 replacement are the things I remember, and that was
16 the tobacco industry got together and decided to go
17 look for another guy and hired somebody to look --
18 look for candidates, and I assume they did the same
19 thing. The -- they went looking for a very
20 prominent scientist, but I don't know any more than
21 that.

22 Q. Do you know anything about Dr. Little,
23 his background?

24 A. Yeah. Being a lab animal
25 veterinarian, he's a very famous scientist because

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1 he started the Jackson Laboratory which is to this
2 day the number one repository of genetically defined
3 mice in the world. And he had a number -- he
4 actually -- I can't remember today all the things
5 he's done. I knew him mostly for that because I'm a
6 lab animal veterinarian. He did a number of other
7 amazing things. I remember reading about him one
8 time and was quite im -- I can't remember today what
9 all the things were, but I was quite impressed at
10 his career. But if for no other reason, creating
11 Jackson Laboratory is -- is a -- that's an amazing
12 legacy because that's, like I say, the number one
13 genetic repository of mice. And that may have no
14 significance to the rest of you, but we know more
15 about mouse genetics than any other animal and we
16 have more mouse models than any other model, and
17 Jackson Laboratory supplies those to every research
18 university in the world.

19 MR. MIGLIORI: Let's take a break for
20 a second. We've got to change the tape.

21 VIDEOGRAPHER: We're going off the
22 record at 11:42.

23 (A recess transpired.)

24 VIDEOGRAPHER: This is the beginning
25 of Videotape Number 2 in the deposition of Thomas

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1 Hamm, Jr. We're going on the record at 11:47.

2 BY MR. MIGLIORI:

3 Q. I'm going to keep using these breaks
4 to bring me back to where I was with the exhibits.
5 And looking at the bottom of your list of reliance
6 materials you talk about the deposition exhibits for
7 Dr. Henry for the State of Florida action. Did you
8 review that deposition prior to today for purposes
9 of today?

10 A. I read that deposition again -- I read
11 all three of these again within the last couple of
12 weeks. And it's kind of hard to say specifically in
13 preparation for -- I'm listed in several cases, and
14 I don't know when and if I'll be deposed or have to
15 testify in those as well, so it hasn't -- it isn't
16 specifically for today, but it could be.

17 Q. Okay.

18 A. And so I did review those again
19 because with this vast volume of information it's
20 difficult for me to keep all these things in my --
21 in my head. It really gets confusing, so I reread
22 those to make sure that what I had thought I had
23 read in there before was what was actually in there.

24 Q. Are these depositions that were made
25 available to you through Shook, Hardy & Bacon?

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1 A. Yes, that's correct. They -- they --
2 and I was -- I particularly asked for these three
3 because these are three where there are allegations
4 and so forth, and I had looked at other parts of it
5 and -- and had heard other sides of this. And so it
6 was particularly interesting for me to hear from
7 them their own version of -- of the facts.

8 Q. Well, what is it specifically from a
9 deposition of Dr. Henry that you intend to rely upon
10 in offering your opinions in the Oklahoma action?

11 A. Well, I can't sitting here, you know,
12 give you a page and an -- and an article, but what
13 in general I'm doing with all three of these is
14 there have been allegations of things that happened
15 to them that I have examined by looking at all the
16 rest of this stuff. And what I wanted to see was in
17 their own words and there's -- there's large
18 portions of that. In fact, these -- I would say
19 probably almost the whole deposition because in
20 these depositions they spend most of their time
21 talking about their contract work at CTR which is
22 something I was examining. So I'd say essentially
23 their whole deposition is -- is part of what I've
24 used to form my opinions.

25 Q. Let me do it a little differently

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1 then. As to Dr. Henry, what allegations were you
2 particularly concerned about when you asked for that
3 deposition from Shook, Hardy & Bacon?

4 A. Well, there are several, and I
5 probably won't think of them all today, but the
6 major thing with Kouri and Henry, since they worked
7 together, was there were some allegations that
8 something had gone on with -- with their work on the
9 Blue Book and whether they had been -- something had
10 happened with editing of it, or transcribing of it
11 or production of it. And so I was looking to see
12 more information than what I had in the documentary
13 evidence what -- what was the basis for their
14 objections.

15 Q. Can you be more specific about what
16 you understood those allegations to be against
17 Drs. Henry and Kouri with respect to the Blue Book?

18 A. They weren't against them.

19 MR. MERRITT: Yeah. Okay.

20 A. They were -- there -- there were
21 allegations surrounding them, whether started by --
22 I don't know exactly how it all got started, but
23 they had both been -- had both written Affidavits as
24 well at some point in time that said they were --
25 they were -- they were unhappy with how the Blue

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1 what your understanding is today of how they would
2 have done it differently or how they misrepresented
3 what was in the Blue Book. What is your
4 understanding?

5 A. Well, that's what's difficult for me
6 because after reading their depositions I can find
7 very little substance to their objections and there
8 must be some objection they have that they haven't
9 really -- I don't know really what's bothering them
10 because the ones they've surfaced don't really make
11 much sense to me so -- but the major -- the major
12 thing they seem to be unhappy about is they didn't
13 like how the Blue Book -- well, first of all, they
14 didn't think the Blue Book should be published at
15 all which I disagree with. Secondly, they didn't
16 like the introduction because they thought it
17 misrepresented the book and I disagree with that as
18 well. And that seems to be the sum and substance of
19 the -- of their problem.

20 Q. Why do you disagree with them with
21 respect to whether or not the Blue Book should have
22 been published?

23 A. It's very common to publish technical
24 reports for these kinds of studies. And when I was
25 at the cancer institute we published a similar

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THOMAS E. HAMM, JR. - EX. BY MR. MIGLIORI 100

1 technical report for every study that we did and
2 when I was at CIIT we did as well. So as far as I'm
3 concerned it's almost standard practice in -- in the
4 field. And so that's why it's difficult for me to
5 see why they're unhappy with it.

6 Q. You say it's almost standard practice.
7 When wouldn't you publish a Blue Book?

8 A. Lots of companies when they do this
9 kind of work don't publish technical reports.
10 The -- the information is kept secret within the
11 company. So if a pharmaceutical company, for
12 example, did one of these studies, they would -- it
13 would not be published. But if the government did
14 it, or CIIT did it or in this case CTR did it, it
15 makes -- it's -- it's good that it's published.
16 And, in fact, I wish the pharmaceutical companies
17 published theirs as well because that's good data
18 that would help scientists plan the next experiment
19 but they for business reasons don't publish those.

20 Q. And can you articulate why you
21 think -- or why Drs. Kouri and Henry did not want it
22 published?

23 A. I can't. Based on the information
24 supplied to me I do not -- I still do not understand
25 the basis for their unhappiness.

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1 Q. Okay. Based on the information
2 provided to you by Shook, Hardy & Bacon?

3 A. No. Based on all the information, a
4 lot of which was provided to me when I requested it
5 from Shook, Hardy & Bacon. But I've looked at all
6 the correspondence between Kouri and Henry that's in
7 the files at CTR and all the correspondence that's
8 in the files of Microbio -- MAI. And so I have a
9 very good understanding of what went on at the time
10 and what went back and forth and I don't -- and even
11 having read their deposition I don't still -- I
12 mean, I see where they're unhappy that the Blue Book
13 was put out. They're unhappy that -- with the
14 introduction and so forth, but when I look at the --
15 the facts, I cannot still understand why there's any
16 problem.

17 Q. Do you know specifically what they
18 thought was misrepresented in the introduction?

19 A. They don't -- now it's very -- it's
20 difficult for me to remember exactly what's in the
21 deposition. There are some -- those questions were
22 asked specifically and were answered specifically.
23 Sitting here today my -- my recollection is -- is --
24 is that Carol Henry just thinks that she should have
25 written the introduction and she would have somehow

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1 tremendous amount of information, more than I've
2 ever had when I've reviewed any kind of experiment
3 ever, and based on that amount of information I -- I
4 still don't know today why Carol Henry and Dick
5 Kouri are unhappy. And based even on having the
6 advantage of having them deposed and hear their --
7 in their own words. I don't agree with them. Like
8 I say, it should have been published. I think the
9 information -- it's all factual and good and so I
10 cannot see the basis for -- for their objections.

11 Q. Do you know Drs. Henry or Kouri?

12 A. I know both of them.

13 Q. How long have you known them?

14 A. I -- I was well acquainted with them
15 at this period of time because we had contracts at
16 MAI as well. I haven't had -- and then I had some
17 contact -- Carol Henry gave a paper at a meeting I
18 sponsored at CIIT, but I haven't had any contact
19 with either one of them since that time. So I -- I
20 know them, they know me, but it's very -- we don't
21 know each other well and we haven't seen each other
22 for many years.

23 Q. Are they respected in the field -- in
24 their respective fields?

25 A. Yes.

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1 Q. Would you consider them authorities in
2 their fields?

3 A. You'd have to specify what field
4 you're talking about so -- they were excellent
5 managers of this project and were excellent at what
6 they were doing at the time, but we can get into the
7 same discussion and ask are they pathologists?
8 They're not pathologists. That kind -- you know,
9 you'd have to specify, but as toxicologists and
10 certainly at this time this was a very excellent
11 study.

12 Q. Well, are you saying that in
13 toxicology then you would consider them to be
14 authorities?

15 MR. MERRITT: Are you saying today or
16 then?

17 BY MR. MIGLIORI:

18 Q. We'll say then.

19 A. You just made it harder. Now I've got
20 to do two time frames. I know them less today
21 and -- but as far as I know they're very well
22 respected and at the time were very well respected.
23 That's why this work was done with them.
24 Dr. Kouri -- well, and all you've got to do is look
25 right here and you can see -- they did some

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1 fantastic work and published some very important
2 papers in -- in this area. So I don't -- I don't
3 have any problems -- they're very skilled, excellent
4 professionals then and I assume they are now,
5 although I don't know them as well now. I guess
6 they're like me, they're older and wiser and --

7 Q. Would you consider the works that
8 you've referred to, the excellent works that you've
9 referred to, authoritative in their fields?

10 A. Yes. Particularly when you consider
11 they were working at a contract lab where
12 frequently -- if you look at people in general who
13 work at contract labs, they're frequently not even
14 allowed to publish. And both Kouri and Henry, but
15 especially Kouri, have very impressive publication
16 records of many articles that are very -- in fact,
17 their Blue Book which they're so unhappy with is a
18 very excellent publication of a technical report of
19 a -- that they wrote of a -- of a very important
20 study.

21 Q. That done by --

22 A. They should be proud of it, I think,
23 instead of unhappy with it.

24 Q. And you're talking about they should
25 be proud of it, their study?

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1 A. Right.

2 Q. Okay.

3 A. And the Blue Book.

4 Q. Dr. Homberger, you have listed here as
5 the last of the documents you principally relied
6 upon. And then you cite the Cipollone case, the
7 Broin case and exhibits. Same thing. With respect
8 to Dr. Homberger, what about his testimony is it
9 that you intend to rely upon when you offer your
10 testimony in the Oklahoma matter?

11 A. Well, it's a similar matter in that
12 Homberger and his complaints about his projects --
13 and I've done the same type of review of the -- of
14 the papers on both sides, and as part of that it's
15 always excellent if I can also see the deposition of
16 the individual to see their answers to -- to these
17 questions. And so basically what -- what -- the
18 reason I read all of these was to see in his words
19 what he feels is -- is what happened at the time.

20 Q. What are Dr. Homberger's complaints as
21 you understand them?

22 A. His principal complaint is he -- he
23 alleges that he was not -- was not -- he was --
24 pressure was put on him to not publish a paper
25 identifying a lesion in his hamsters as cancer. And

1 that's the principle --

2 Q. When was that study with the hamster?

3 A. It's roughly the same time period,
4 late 70s, early 80s.

5 Q. Okay. And --

6 A. Funded by the same -- CTR was funding
7 contracts to find a model and -- of lung cancer and
8 funded his hamster model, but he, once again, did
9 not find lung cancer. He found a lesion in the
10 larynx that he -- he believes is cancer and it's
11 debated to this day whether it is or isn't. And
12 his -- that seem -- there's other minor things I
13 think going on, but that's the major thing that he
14 seems to be unhappy about.

15 Q. What is -- what side of the debate do
16 you fall on with respect to whether these lesions
17 were cancer?

18 A. Well, I'm smart enough to tell you
19 that since I haven't seen the exact -- a good
20 pathologist would want to see the blocks, not the
21 slides and cut his own slides and then he'd want
22 some veterinary pathologists that know about Sendai
23 virus and all these other things that can cause the
24 same lesion before he would commit because this
25 lesion could be cancer or it could be a squamous

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1 metaplasia due to a number of -- of the things I
2 just mentioned, Sendai virus, nutrition. There's a
3 lot of things that cause a similar lesion in
4 hamsters. So I don't think anyone knows. And
5 anyone who tells you they know, unless they've seen
6 the blocks, cut the thing and are experienced with
7 these lesions probably doesn't know. But regardless
8 of that, I mean, you don't have to decide is it or
9 isn't it cancer. And when I look at what happened,
10 he published the information as he wanted to publish
11 it. His objection is someone tried to tell him that
12 it was something else, and the person telling him
13 was a respected pathologist at the time, Sommers,
14 who -- who if Sommers told me something, I'd listen.
15 So as a scientist lots of people tell you and then
16 it's your choice and that's what happened in this
17 case. So since it was published, to me I, once
18 again, have difficulty understanding the basis for
19 what Homberger is still unhappy about these many
20 years later.

21 Q. Have you ever read any documents
22 authored by Dr. Sommer -- or Sommers about the role
23 of CTR with respect to tobacco and health?

24 A. I've read his deposition, a couple of
25 them, I believe. I can't tell you which trials.

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1 Q. Have you --

2 A. I've seen some memos that he's written
3 through the years. Some have been presented to me
4 at depositions. I don't know more specifically
5 what -- what you want me to --

6 Q. Do any documents come to mind when I
7 ask you that question? Have you seen any -- any
8 documents or have you heard about any presentations
9 that he gave?

10 A. I've seen his CV. I've seen a number
11 of memos back and forth. I've seen memos that have
12 been presented to me at -- at depositions. I've
13 seen a couple of his -- of his depositions and
14 that's all I can think of today of -- of -- well,
15 I've seen him in the annual reports in his role as
16 becoming scientific director. I've seen his CV.

17 Q. Based on what you -- you have
18 reviewed, what do you think he perceived his role to
19 be with CTR?

20 MR. MERRITT: I'm going to object to
21 that because it doesn't -- you don't specify what
22 time period you're talking about.

23 MR. MIGLIORI: While he was a member
24 of CTR or otherwise --

25 MR. MERRITT: I'm going to -- I'm

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1 going to object to that because he wore different
2 hats over -- over time and he was with CTR for two
3 decades. You can answer to the extent you can.

4 A. It's -- I don't have a complete enough
5 record to know everything he's thought about this
6 his long life and -- but I think at the time and I
7 think in his deposition he is of the opinion as are
8 many other scientists that this is not cancer and
9 that's about -- that's as good -- I don't have a
10 complete written record of -- of all these events.
11 I don't think anybody -- I don't think it exists.
12 There is still controversy and people still -- I saw
13 at the SOT meeting last year there were papers on
14 this lesion and it was still -- they were calling it
15 squamous metaplasia. So many -- many people still
16 don't know what this lesion is. But irregardless of
17 what it is, Homberger as far as I could see got to
18 publish what he wanted to publish and so I don't see
19 anything inappropriate with what happened.

20 Q. My question with regard -- or my
21 previous question was whether you now have an
22 understanding of what Dr. Sommers perceived the role
23 of CTR to be with respect to tobacco and health and
24 not with respect to Homberger's --

25 A. Oh, I'm sorry.

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1 Q. -- research.

2 A. I haven't really even thought about
3 that. Sitting here today I don't know, but I would
4 assume just like all other members of the Scientific
5 Advisory Board they were trying to do good science
6 to find the mechanisms of what causes the health
7 problems when exposed to -- to tobacco. And I've
8 never seen anything where he's said anything other
9 than that, but I've never really examined nor do I
10 have the documents, I don't think, to really know
11 his -- his -- all -- any more than what I've just
12 said.

13 Q. Were there any other complaints of
14 Dr. Homberger? You said there were some minor other
15 issues aside from what you've already talked about
16 that -- complaints that Dr. Homberger had with
17 respect to CTR?

18 A. He was unhappy with some lawyer -- a
19 lawyer came to visit him at his home and he talks
20 about that at length in his deposition and that's
21 one of his other complaints.

22 Q. Do you have an opinion about the
23 propriety of that complaint?

24 A. Once again, it's -- my area of
25 expertise isn't psychology, or social science, or

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1 history or any of those disciplines you'd really
2 need to look into this. But in the deposition, as I
3 remember it sitting here today, Homberger had the
4 dates all wrong. It appeared that the lawyer was
5 there talking about contracts. There was
6 documentation from Homberger that, yes, we've done
7 this and that and it appeared to me that Homberger
8 was confused because of the many years that have
9 gone on. And it -- it really appeared to me that --
10 that he doesn't have this right -- right in his mind
11 at this point in time which wouldn't be surprising.
12 It's been a long time.

13 Q. It's your understanding that --
14 understanding that Dr. Homberger's concerns about
15 the lawyer showing up at his house had to do with
16 the terms of the contract?

17 A. Sitting here today that's how I
18 remember. The deposition goes into this in great
19 detail and it -- it wasn't one of the areas that I
20 was particularly interested in. But as I remember
21 it sitting here today, there were some contractual
22 issues and -- and they went to talk to him about
23 that. And he has the dates off in his mind, and
24 that was all in his deposition.

25 Q. Any other complaints of Dr. Homberger

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1 that come to mind?

2 A. That's all -- that's all I can think
3 of sitting here today.

4 Q. Okay. I'm going to give you what I'd
5 like to mark as Hamm Exhibit Number 2, a copy of --
6 it's entitled, Expert Disclosure Statement of Thomas
7 E. Hamm, Jr. And this is a disclosure statement for
8 the State of Oklahoma action.

9 (PLF. EXH. 2 was marked for
10 identification.)

11 BY MR. MIGLIORI:

12 Q. If you would, Doctor, just take a look
13 at this and tell me if you recognize it.

14 A. Yes, I do recognize this.

15 Q. Okay. The first two pages are the
16 actual disclosure. Have you seen that before?

17 A. Yes, I have.

18 Q. Who prepared that?

19 A. This was the same mechanism I talked
20 about earlier. Early on when I started doing this
21 we wrote one of these and then we've been reviewing
22 it and fixing it ever since.

23 Q. Okay.

24 A. Bringing it up to date.

25 Q. And we being --

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1 A. I'm sorry. Vicki Thompson is the
2 major person that I work with and then several
3 lawyers at Shook, Hardy & Bacon are the ones that
4 assist me.

5 Q. Before I get into the first two pages,
6 I want to direct your attention to the third page
7 which appears to be the beginning of your curriculum
8 vitae. Is that --

9 A. That's correct.

10 Q. -- correct? I notice, and only with
11 the benefit of having seen your disclosure in other
12 litigation, that this does not appear to be the most
13 current CV. And I'm basing that on your office
14 address of the College of Veterinary Medicine at
15 NC State University.

16 A. Right.

17 Q. I assume that when this disclosure was
18 turned over you were still --

19 A. Yeah. This was current at the time
20 and -- and there's another one you're probably going
21 to show me.

22 Q. I want to make sure I have the most
23 current. This is -- I'm going to mark this -- have
24 this marked as Hamm Exhibit Number 3. And I just
25 want to make sure that this, in fact, is the most

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1 current.

2 (PLF. EXH. 3 was marked for
3 identification.)

4 A. I've written -- I've updated my CV as
5 of this weekend and there's minor changes. So -- I
6 got an award in Cincinnati is about the only change
7 but this is other than that change the current --
8 this is the CV I wrote when I retired.

9 Q. Okay. So --

10 A. And I think -- I hope -- no, it
11 doesn't have a date. It should have a date on the
12 last page but --

13 Q. Okay. I -- when you say it, you're
14 talking about Number -- Exhibit Number 3, correct?

15 A. Yeah. Exhibit Number 3 is my most
16 recently printed CV, but I have a -- I've slightly
17 updated it by just adding an award that I just won
18 to the honors and awards section.

19 Q. Okay. And that's in 1998? You just
20 received this award?

21 A. I just received this award.

22 Q. Why don't we deal with that right now.
23 What award was that?

24 A. It's called the Griffin Award, and
25 it's from the American Association of Laboratory

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1 Animal Science.

2 Q. And you received that when?

3 A. Just last week.

4 Q. Going back to Exhibit Number 2. The
5 first two pages -- this is the expert disclosure
6 that was filed and you said that's -- we've already
7 talked about it a little bit. And is this -- are
8 these first two pages of Exhibit Number 2 current
9 and accurate?

10 A. Yes, they are.

11 Q. Okay. We covered many of the issues
12 in this disclosure already this morning, but I
13 wanted to ask you in the fifth paragraph in the
14 first sentence the disclosure reads, Dr. Hamm is
15 expected to testify that CTR's use of contracts
16 rather than grants in its attempt to develop an
17 inhalation model was entirely appropriate. Is that
18 an accurate reading of that?

19 A. That's a perfect reading of that.

20 Q. Okay. Thank you. The -- can you tell
21 me why the use of contracts rather than grants was
22 entirely appropriate?

23 A. We discussed a little bit earlier the
24 nature of contracts and grants, and it turns out
25 when you're really doing a large project like this

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1 where you have to develop smoking machines, you have
2 to pick an animal model and so forth, are very
3 difficult to do in a granting mechanism because it's
4 a very directed, focused type of work. And so
5 almost always this type -- and also there are very
6 few organizations that can do this kind of work. So
7 the average research university, for example, would
8 be very -- it would be very difficult for them to do
9 this kind of a project. And there are contracting
10 organizations who are much better equipped and --
11 and organized to do this. And so generally this
12 type of work would be done on a contract basis
13 rather than a grant basis.

14 Q. The last sentence of that same
15 paragraph says that the strengths and weaknesses of
16 grants versus contracts in different circumstances
17 is often the source of vigorous debate. Where is
18 that debate aired?

19 A. Well, in fact, it reminds me that's
20 one of Homberger -- I forgot that's one of
21 Homberger's allegations is -- is people -- whether
22 he said it or others have said it, the idea that he
23 had a -- he had a grant that was changed to a
24 contract and thereby giving the sponsor more
25 control. And so people debate over that kind of an

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1 issue. And there are strengths and weaknesses to
2 either mechanism and you can debate it either -- you
3 know, you can debate it either way which is a better
4 mechanism to do these kinds of studies.

5 Q. Is Homberger's statement accurate that
6 if a -- if a grant turns into a contract that the
7 researcher loses control?

8 A. Not -- well, I may have to qualify it
9 a little in that the control is different between a
10 grant and a contract obviously because the -- the
11 whole idea of what you're doing is different. So
12 when you're given a grant, you're given a lot of
13 latitude to produce a result. And if you do a good
14 job, you'll get another one. In a contract you're
15 told what to do. And then there are differences in
16 publication. Generally in a grant you publish it
17 and your sponsor generally doesn't even see it or
18 may not see it before you publish it. A contract
19 typically, the -- the sponsor has rights that are
20 even specified in the contract of what mechanism
21 will be used to publish.

22 Q. Why did you choose the term vigorous
23 debate?

24 A. I'll have to think about that. I
25 really -- well, in the context of this, the -- I

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1 don't know why I picked vigorous, but in the context
2 of a scientist, this is something that we debate
3 vigorously all the time, so that's probably where it
4 came from. There's a -- there's a constant battle
5 at the government level over how much money will go
6 into grants and how much will go into contracts.
7 And so we're always fighting over that, so that's
8 probably why I picked it. It hasn't been so
9 vigorous in this context in that basically Homberger
10 is the only one that has raised any kind of issue
11 that I can remember. I don't think anyone else --
12 he's the main one who's brought up that issue.

13 Q. You don't recall anybody else who
14 brought up the issue of contract versus grant money
15 with respect to CTR research?

16 A. I -- I can't think of one today.

17 Q. As you go on to the next page -- well,
18 starting at the beginning of -- or the bottom of the
19 first page it says that Dr. Hamm is also expected to
20 testify that CTR's movement towards basic research
21 was also appropriate and reflected a similar
22 movement within the general scientific community.
23 That's reading the last line on the first page and
24 the first two lines on the second page. What are
25 you referring to when you say that that movement

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1 towards basic research reflected a similar movement
2 within the general scientific community?

3 A. Well, this was a time point in our
4 history when that, in fact, was occurring and that
5 previous to this the concept had been that if --
6 that a lot of this testing was going to get us
7 somewhere. And at this time point we were beginning
8 to realize as scientists that all we were getting
9 was yes, no answers and no mechanism. And so there
10 was a very -- and this also reflected the battle
11 that went on during this time where scientists
12 attempted to get more contract money turned into
13 basic research money. And so that was reflected in
14 the Scientific Advisory Board who was under this
15 same kind of thinking throughout science. So I
16 don't know that that outside influence influenced
17 them, but it likely did. My organization at the
18 National Cancer Institute was given away to NIEHS
19 because the cancer institute made the same decision
20 at this time. That's the reason that I left and
21 went to CIIT. So the cancer institute was making
22 this same decision at this same time as well.

23 Q. When you say this time, you're
24 saying -- you're referring to when?

25 A. This is approximately 1980 when the

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1 cancer institute gave us away to NIEHS.

2 Q. And when you say this research, you're
3 talking about animal-based research?

4 A. No. It's -- it was -- it was human --
5 it was throughout -- irregardless of the type of
6 research, it was the realization that testing and
7 yes, no answers wasn't going to solve the problems
8 of cancer, that what we were going to have to do
9 was -- was find out the mechanism. And this -- you
10 may remember the war on cancer, a lot of that money
11 was being diverted out of -- applied to more
12 basic -- it's a -- it's an argument that goes on
13 throughout science and it was particularly going on
14 at this time.

15 Q. Was CTR looking for a mechanism prior
16 to 1980 with respect to smoking and lung cancer?

17 A. Yeah. They had -- and, again, if you
18 put five projects on the table and had ten
19 scientists tell you which one was basic and which
20 one was applied, those aren't very firm definitions
21 either. So it's -- it's an overall basic movement.
22 In general moving away from contracts and moving
23 towards grants is considered that. But there are
24 many grants that -- that are very applied as opposed
25 to being basic. So it's not a very clean area to --

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1 to discuss because there's so many definitions at
2 play. But the move from contracts to grants is --
3 is -- is considered by most scientists to be a move
4 away from -- a move towards more basic mechanistic
5 type studies as opposed to -- just because of the
6 nature of the two types at play.

7 Q. In your review of the CTR materials,
8 though, is it your opinion that CTR was in the
9 process of looking for the mechanism prior to 1980?

10 A. Yes, they were. They -- they had many
11 grants and -- and, as I said before, it would be
12 debatable the percent of mechanistic versus applied.
13 But they had many grants before and they moved at
14 this point to take the contract money and move it
15 into even more grants so that their -- their
16 grant -- their program became mostly grants at this
17 point as opposed to a combined grant, contract sort
18 of -- of funding mechanism.

19 Q. Are you equating contract research
20 with applied research and, conversely, grant
21 research with mechanistic?

22 A. In a very general sense. But as I've
23 said, there would be debate within either of those
24 mechanisms of how applied or how mechanistic it is.
25 But in general contract work tends to be more

1 applied because by the -- contract by its nature is
2 you're specifying something to be done a specific
3 way which implies you know the basic stuff, now
4 you're going to apply it. But that's not always the
5 case. I mean, it isn't a very rigid -- you could
6 have a contract to do something that was very
7 mechanistic, but in general a contract tends to be
8 more applied and in general a grant tends to be more
9 mechanistic, quite a bit more. So there would be an
10 obvious -- but there would be an overlap. So if you
11 showed the bell-shaped curves of grants and
12 contracts, there would be a big overlap with regard
13 to whether it's applied or mechanistic.

14 Q. Does it make sense to do contract
15 research or applied research before you know what
16 the mechanism is?

17 A. Again, it's an area of real debate
18 because you never really know everything and then
19 apply it. So you're constantly knowing a little bit
20 and trying to apply it and then knowing a little bit
21 more and trying to apply it even better. So there
22 is a mechanism to do contract work before you know
23 mechanism if you know -- you think you know part of
24 the mechanism or you think you know a way to create
25 a model to look at the mechanism. So it isn't that

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1 we just -- we do all this basic stuff and then,
2 shazaam, we do something applied. It's a continual
3 process of we know a little bit, we apply it, we
4 know a little bit more, we apply it more and -- and
5 it's debatable whether contracts or grants are the
6 mechanism to -- that's where the vigorous debate
7 comes among scientists. Scientists believe, and
8 they're probably right, that the way to get ahead in
9 science is to put all the money into completely
10 unrestrained, no questions asked -- just give us a
11 bunch of money and we'll do good things. Now in an
12 ideal world that's probably right. In the real
13 world probably a lot of that would be frittered
14 away. So that's where the contract comes in is in a
15 contract you have a very specific thing you need to
16 have done and so you -- you set it up so that that
17 will be done. But that piece of work then can go
18 back into mechanistic or applied and it -- and it
19 moves back and forth.

20 Q. What's the role, if any, of
21 competition among scientists for research money in
22 advancing the science?

23 A. You may have to ask me a more -- I'll
24 give a shot at that. All scientists to do science
25 have to compete for money in some way. So some of

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1 them do it by going to organizations that just fund
2 them. Others do it by funding it themselves. But
3 if you're working with sponsors, almost everyone has
4 to generate the money to do their work and there's
5 fierce competition for that money. And that fierce
6 competition has advantages and it has disadvantages.
7 The fierce competition hopefully lets the cream rise
8 to the top, but it also brings out some of the baser
9 elements in people because there is fierce
10 competition to get this money. So I -- you may have
11 to ask me a more specific -- that's a very general
12 view of -- of it. I think most people don't
13 comprehend that most of us -- like I was a tenured
14 professor at NC State, but NC State gave me zero
15 dollars to do research. If I want to do research,
16 I've got to go compete for that money and yet NC
17 State will even judge me in how much I get and how
18 much I publish and so forth even though they didn't
19 give me a dime in the first place. So it's a very
20 bizarre -- so all scientists are entrepreneurial and
21 fund-raisers or they don't get much science done.

22 Q. As it relates though to the ultimate
23 goal of science to get better answers and build
24 and -- I think in a prior testimony you said that
25 science is self-correcting?

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1 A. It is.

2 Q. Is that competition an important
3 element -- now I'm just talking about competition as
4 to funding. But is that an important element in
5 this self-correcting nature of science?

6 A. I don't know if it's important in the
7 self-correcting nature. I'd have to think about
8 that some more. But it definitely is important in
9 the quality because if you look at the -- the -- if
10 you -- if you name the top -- the ten best
11 scientific institutions in the world and then look
12 at their source of funding, it's generally grants.
13 And the people who can compete for grants and who
14 can get the grants are generally the best
15 scientists. So if you were going to rank -- if you
16 took who got the most money out of grants and -- and
17 who are the best organizations, there would be a
18 high correlation between the two. And organizations
19 where money tends to be given to you without any
20 competition, the quality and quantity of science
21 tends to be very low at those places. So
22 competition has the advantage of forcing people to
23 do great science so they can get the money. But it
24 has the disadvantage of -- of -- it brings out baser
25 elements in people who have difficult -- especially

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1 those who have difficulty competing. So it has, I
2 think, an overall more positive influence than it
3 does a negative influence, but there are definitely
4 negative aspects to it as well.

5 Q. And that doesn't so much affect the
6 quality of the science; that more has to do with the
7 individual research in terms of -- in terms of the
8 quality of the --

9 A. It can affect the quality in the -- in
10 the respect that there is a publisher perish --
11 imperative to getting grants. You have to have
12 papers. And so people might put worse papers out
13 just to get a paper out and -- but that's where the
14 self-correcting part of science comes in. If you
15 put out something that's wrong for whatever reasons,
16 it may be because you're just wrong, it will
17 hopefully be self-correcting over time because
18 someone else will do another experiment and show
19 that you were either right or wrong. And if
20 you're -- if ten people do it and you were wrong all
21 ten times, then your paper is -- is no longer
22 considered an important part of science. But -- but
23 because it's published doesn't mean it's -- you
24 know, many things in science are wrong. In fact,
25 scientists have very wrong -- we used to think

1 that -- that malaria was caused by swamps and 100
2 percent of scientists believed that and published
3 that. And we now know -- then they thought it was
4 mosquitoes and then they realized it was something in
5 the mosquito. And so now we know it was a parasite
6 in the mosquito that causes malaria and we know how
7 to control it. So science kind of self-corrects
8 that way and the competition -- I believe free
9 enterprise as opposed to communism is -- is a better
10 system, but it has its -- its disadvantages. Sort
11 of free enterprise versus communism as opposed to
12 have to go get a grant or have the money given to
13 you.

14 Q. And you sort of in your answer
15 anticipated my question about grants with respect to
16 this competition. In the grant system of research
17 or the grant-sponsored research, this idea of
18 competition is -- flourishes more, does it not?

19 A. Than in contracts you mean?

20 Q. Yes.

21 A. Well, no. Contracts are very -- the
22 difference might be that it's considered better to
23 have a grant than a contract. So grants are
24 generally considered more highly than contracts in a
25 very general sense because there's some very

1 important contracts out there. The breast cancer
2 contract. I mean, it would be -- you'd be
3 considered an important center if you had that
4 contract. But in general sorts of terms if you
5 could get a grant, it's considered better than a
6 contract. But contracts are very highly sought
7 after as well, and there are organizations that do
8 nothing but contracts and compete very aggressively
9 for those contracts. So there -- there's -- there's
10 competition for contracts as well as there are for
11 grants. Now in contracts, though, you're competing
12 more from a standpoint of your abilities and grants
13 you're competing more in your ability to think. So
14 it's more an intellectual competition. The other is
15 more, we have the facilities, we want the money.
16 But it's very -- it's still very highly -- among
17 those contracting organizations they fight very hard
18 for those -- those contracts as well.

19 Q. Is the quality of the science impacted
20 upon by whether or not the research is funded by
21 grant or by contract?

22 A. There are -- there are -- there's --
23 excellent science comes out of both mechanisms and
24 the -- the difference so much isn't quality. The
25 difference is -- with a contract there's more of a

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1 guarantee that -- that results will occur at a
2 certain time and be published; whereas, with a grant
3 it may -- nothing may happen. So a contract is much
4 more direct -- it's at a different stage in a sense
5 and it's much more directed. But the quality can be
6 very high irregardless or very low irregardless of
7 the funding mechanism.

8 Q. And when you say directed, you're
9 talking about, again, the applied nature of it,
10 it -- the fact that it's -- it's targeted?

11 A. Yeah. A contract in general tends to
12 be much more targeted and have specific completion
13 objectives and dates; whereas, a grant tends to be
14 more, I have this idea, let me work on it and I'll
15 see what I can do in a few years and if I do good
16 work you'll give me another one.

17 Q. If contracts -- is it fair to say that
18 targeted research or contract research is more
19 appropriate in instances or in circumstances where
20 there is a broader knowledge of the underlying
21 issues in a particular area?

22 A. Not necessarily. It -- it means
23 basically that there's a specific thing you're
24 trying to accomplish and you have enough information
25 to do that. But you still might not have a very big

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1 understanding of the total area. A grant is more
2 let people -- in a way -- another way to look at it,
3 I guess, is -- is in a contract it's more the
4 sponsor knows what he wants to do and gets somebody
5 else to do it. In a -- in a -- in a grant, the
6 grantee knows more of what he wants to do and gets a
7 sponsor to pay for it.

8 MR. MIGLIORI: Okay. I think with
9 that we should probably --

10 MR. MERRITT: Want to take a break?

11 MR. MIGLIORI: -- take a lunch break.

12 MR. MERRITT: Okay. How long you
13 want?

14 VIDEOGRAPHER: We're going off the
15 record at 12:38.

16 (A luncheon recess transpired.)

17 VIDEOGRAPHER: We're going back on the
18 record at 1:44.

19 BY MR. MIGLIORI:

20 Q. Okay. Dr. Hamm, I believe we left off
21 with Exhibit Number 2, and I think we're on the
22 second page. Just a couple more points with this
23 exhibit that I wanted to explore. In the second to
24 last paragraph it says that Dr. Hamm will also offer
25 opinions on animal research performed elsewhere

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1 whether funded by CTR or other funding
2 organizations. Are you referring to any specific
3 opinions in that section?

4 A. Basically -- and -- and we -- we -- we
5 did some of that in the test -- the testimony
6 earlier this morning is I've done similar research
7 at the cancer institute and CIIT and I'm aware of
8 other -- of other research in -- in the general
9 scientific community that I compare and contrast to
10 the CTR study, so we're not meaning any more than
11 that.

12 Q. Okay. So when you drafted this, this
13 was just sort of a general background opinions on
14 animal research, opinions that you might have
15 generally on animal research as opposed to any other
16 opinions relevant to -- my concern here is that --
17 that you refer to CTR funding when you say other
18 animal research. And I -- I want to know
19 specifically if there's other CTR research -- funded
20 research.

21 A. Well, there -- there is -- there are
22 other contracts that -- that I have looked at that
23 were to develop the smoking machine and so forth,
24 but they're all part of the emphasis to try to
25 develop a model in the -- in the rodent which

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1 culminated in the MAI study. But there were other
2 contracts and so forth as part of that. And as well
3 I'm trying -- I'm saying that the MAI was an
4 excellent study. I have to do that in the context
5 of what was going on elsewhere and what was
6 happening regardless of who funded it so -- and
7 that's all we mean there.

8 Q. Okay. The same paragraph, the last
9 sentence you -- it is written, Dr. Hamm may also
10 testify regarding opinions expressed by plaintiffs'
11 designated expert witnesses. Are there any opinions
12 expressed by plaintiffs' designated expert witnesses
13 to which you are specifically referring?

14 A. Not specifically because so far I
15 haven't even seen all of the depositions in this --
16 in this trial. I've seen a few of them, and we're
17 referring to that if one of the other experts is
18 going to say something about this body of
19 information, I'm going to respond to that. But we
20 don't mean any more than that.

21 Q. As of right now are there any experts
22 designated by plaintiffs whose testimony you have
23 reviewed?

24 A. Dr. Roggli's testimony I have reviewed
25 and I have seen -- I won't remember their name. I

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1 believe Cummings and a guy with a hyphenated name
2 and each of those has had a few comments about CTR
3 and about animal research, I think Dr. Roggli more
4 than the others.

5 Q. Do you recall specifically in
6 Dr. Roggli's testimony what opinions he offered with
7 respect to animal research and CTR?

8 A. In that particular deposition it's
9 hard for me sitting here. I've read several things
10 that he's done and it's hard for me to keep which --
11 which one is which. But he has said things, that
12 this wasn't a good study, that it was junk science,
13 those kind of allegations. And I think in this
14 latest deposition he says a little less than
15 earlier, but that's what we're talking about. And I
16 can't remember today -- I don't remember if he used
17 junk science this time or not. Either he has in
18 other depositions -- but he apparently does not
19 think that this was a very well done project for a
20 variety of reasons and so we are going to respond to
21 those -- those kinds of things that he says.

22 Q. As you sit here today do you recall
23 what the variety of reasons are that he expressed?

24 A. Like I say, it's hard for me to
25 remember which ones he said this time and he said in

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1 other -- I've read so many of his depositions. He
2 didn't think at -- at one point at least, I can't
3 remember if this latest one if he still enunciates
4 this, that -- that they looked at the larynx, for
5 example. And he didn't think that the mice could
6 breathe the cigarette smoke because they would hide
7 their nose in the fur. He had several of those
8 kinds of allegations.

9 Q. Is it your opinion that -- and when
10 you say this research, you're talking about the
11 primary research that your testimony concerns,
12 meaning the MAI contract research with CTR?

13 A. That's what I'm referring to, and I
14 believe that that's what Roggli's referring to when
15 he has his objections as well.

16 Q. Okay.

17 A. As far as I can determine that's
18 the -- we're talking about the same project.

19 Q. Is Dr. Roggli correct with respect to
20 his concerns about examining the larynx?

21 A. No, he is not.

22 Q. Why not?

23 A. They specifically state that that's
24 one of the tissues that was examined and there were
25 no lesions.

1 Q. Is there any other reason or basis for
2 you -- for your opinion that Dr. Roggli was
3 incorrect as it relates to this concern about the
4 larynx?

5 A. Is there any other reason --

6 Q. Is there -- do you have any other
7 opinions about Dr. Roggli's conclusions about the
8 study relative to whether it was -- the larynx was
9 properly investigated?

10 A. No.

11 Q. Okay. How about --

12 A. That's basically what he said and
13 that's bas -- and I basically don't agree with him.

14 Q. As for his concern about inhalation
15 and -- do you agree with Dr. Roggli's -- what you've
16 said to be Dr. Roggli's criticism that the mice
17 might not be fully inhaling the cigarette smoke?

18 A. No. The report clearly states that
19 these were nose only exposures and -- and I'm not
20 certain that Dr. Roggli knows that. And so you
21 can't hide your nose in the fur in this type of
22 exposure. That's why this type of exposure is done,
23 to avoid that.

24 Q. I know that you've had your own
25 experiences with MAI. I want to make sure I

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1 understand. Your review of this research between
2 MAI and CTR is 100 percent based upon documents that
3 you have reviewed and your own personal background
4 and experience, but documents you have reviewed
5 since 1992?

6 A. That's correct.

7 Q. You never examined the research during
8 its years prior to 1980? You never personally saw
9 the facilities where they conducted this research
10 during the years it was being conducted?

11 A. I don't know. I was at their facility
12 a number of times. I -- I was unaware that this
13 work was going on at the time so I -- I can't say I
14 wasn't in the facilities, but I -- I didn't know
15 this -- this project was underway or knew -- I had
16 no knowledge of this project at the time it was
17 under -- under study.

18 Q. So you didn't observe, for example,
19 the conditions that the animals were under during
20 the experimentation?

21 A. No.

22 Q. And --

23 A. I did examine our animals in other
24 contracts in the -- in the same or similar facility,
25 but I had -- I never saw that I am aware of any of

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1 this project at all.

2 Q. And when you say same or similar
3 facility, again, you're basing that comparison on
4 documents you've received since 1992 when you were
5 retained by Shook, Hardy & Bacon?

6 A. That's correct. I don't know that, in
7 fact, I was ever in the exact facility even. I was
8 in their animal facility, but they could have had
9 this in a different building. And I had no
10 knowledge of this project directly at the time, but
11 I had a lot of knowledge of Micro at the time
12 because I went and visited contracts that we had
13 there and -- and so I have some information but not
14 directly on this particular experiment.

15 Q. Okay. And the last paragraph of your
16 disclosure the first sentence says, Dr. Hamm will
17 rely on his knowledge and expertise as an
18 experienced scientific investigator, teacher,
19 administrator and peer reviewer. Now this is
20 somewhat out of date -- well, that's not true. You
21 have experience in all those areas.

22 A. Uh-huh.

23 Q. But you're not currently a teacher,
24 are you?

25 A. Well, in a sense -- I still have

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1 residents that I meet with once a week and teach,
2 but I -- I don't teach any formal classes at this
3 point. I may in the future.

4 Q. Okay. And that's at which
5 institution?

6 A. NC State. I -- when I left I had two
7 residents who won't finish for another year and so I
8 have an obligation to them till they finish.

9 Q. Okay.

10 A. So --

11 Q. You retired in July of this year?

12 A. That's correct.

13 Q. And you retired from your position at
14 NC State?

15 A. As a professor at NC State.

16 Q. That was a tenured position?

17 A. Yes.

18 Q. And now -- we'll get into it, but your
19 current curriculum vitae says that you are as of
20 this point a full-time consultant, is that correct?

21 A. That's correct.

22 Q. When you were at NC State there
23 were -- there were restrictions on how much
24 consulting you could do during the year, is that
25 correct?

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1 A. Not much in that as long as it didn't
2 interfere with my daily duties I could nights and
3 weekends do all the consulting I wanted to do plus I
4 could do some during the day. So it -- it varies
5 from organization to organization so there weren't
6 tremendous restraints.

7 Q. But you did have --

8 A. But the problem being is if you have a
9 full-time job and you consult, it -- it adds up to a
10 lot of hours.

11 Q. Okay. Whatever restrictions there --
12 there were, and you've given prior testimony about
13 those, those are no longer true? I mean, now you
14 dedicate 100 percent of your professional life to
15 consulting?

16 A. That's correct.

17 Q. Okay. You no long --

18 A. I shouldn't -- that isn't exactly
19 correct. I'm writing three book chapters. I'm
20 doing other things besides consulting as part of my
21 professional life. So I'm still writing -- I'm
22 writing two or three book chapters right now, and
23 I'm doing other professional things, so it isn't
24 completely consulting, but in -- in -- for all
25 practicality it's consulting.

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1 Q. Okay. The book chapters, are any of
2 those chapters relating to issues of tobacco and
3 health?

4 A. No.

5 Q. Have you ever published whatsoever on
6 the issues surrounding tobacco and health?

7 A. No.

8 Q. It says in this disclosure that you
9 were an administrator -- or that you have experience
10 as an administrator. Are you doing any
11 administrating currently as -- since your retirement
12 from NC State?

13 A. I have a home office and it turns out
14 there's a hell of a lot of administration.

15 Q. In your home?

16 A. In my home office.

17 Q. Okay.

18 A. It's -- I now know why small
19 businesses gripe so much because it is a lot -- I
20 have to file taxes every month and -- and --

21 Q. Okay.

22 A. But other than that I'm not doing any
23 scientific administration.

24 Q. When you say administrator in your
25 disclosure, you're referring more, though, to

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1 administration of scientific research with animals
2 or are you talking about administration within the
3 school? I'm not sure what you mean by administrator
4 in this context.

5 A. Well, I have a lot of experience doing
6 both and -- and I was an administrator at the cancer
7 institute doing inhalation bioassays all over the
8 country and then at CIIT. So I'm referring -- the
9 experience as an administrator that probably bears
10 more as that kind of experience. I also have been a
11 reviewer or a site visitor. I review programs. I
12 review studies. I review projects. And that kind
13 of expertise helps me understand when I try to do
14 this kind of review as well. But basically that's
15 what we're talking about. I think what we tried to
16 do there was just say these are the things I do
17 and -- and I'm going to draw on whatever experience
18 I have. So I don't think we were specifically --

19 Q. Okay. I just want to know which of
20 those things you're still doing and -- and which you
21 retired from in July and --

22 A. Well, I still do site reviews and I
23 still do reviews of scientific projects for the
24 government. I still work as an attending
25 veterinarian for a small company. I -- I do this

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1 work and that's basically the kinds of things I'm
2 doing.

3 Q. Okay. Are you still doing peer review
4 work?

5 A. They haven't asked me -- those come in
6 a real spotty fashion, but I'm still on the list and
7 when they ask me I'll say yes.

8 Q. When is the last time you've done any
9 peer review work?

10 A. It's in my CV. I don't know. It was
11 sometime probably this spring --

12 Q. Okay.

13 A. -- or last fall. It's in my
14 CV though.

15 Q. When you say the list, whose list are
16 we talking about?

17 A. I'm mostly used by the National Cancer
18 Institute and National Institute of Environmental
19 Health Sciences.

20 Q. And the work that you have reviewed
21 has been -- has involved inhalation studies,
22 correct?

23 A. It -- it may. It -- it can involve a
24 whole variety of things. There are cancer centers.
25 I've done reviews of cancer centers, and it can be

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1 essentially the same information, but what I did was
2 I realized when I was updating it that I had
3 everything in here in a chronological fashion. So
4 regardless of who I worked with or what I did, it
5 was just in there in -- in chronology order. In
6 this one I changed it to put it by like government.
7 I said I was a consultant for academic institutions.
8 So I think all of this information or most of this
9 information is in my original CV.

10 Q. Okay.

11 A. It's just in a format where it's
12 easier for somebody to look and see, okay, if you
13 were a consultant for AAALAC, who did you visit.
14 Well, now they're in one place instead of
15 chronological.

16 Q. Okay.

17 A. And then I may have added one or two
18 more because as I was doing it I'd remember, well,
19 wait a minute, I forgot to put this one in. But I
20 think in general the information is almost exactly
21 the same but instead of being in chronological order
22 it's now in -- it's by whether I did it for the
23 government, or whether I did it for a private
24 industry or whether I did it for a university.

25 Q. Okay. The --

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1 A. And I don't know if that's a better or
2 worse format, but it seemed to me an easier way
3 to -- to see what I had done than doing it in the
4 chronological fashion.

5 Q. I didn't have the opportunity to
6 compare the two, and my concern is whether or not in
7 essence it's the same information but rearranged.
8 Did anybody ask you to do that?

9 A. No.

10 Q. This was by your own initiative?

11 A. (Nods head). This is me sitting at
12 home with not enough to do. And frequently I --
13 academics are always working on their CV. When you
14 don't have anything else to do, you sit down and
15 update your CV and I just got carried away with it.

16 Q. Okay. Looking at your education from
17 1970 to 1975, that's when you did the comparative
18 pathology work at Wake Forest University. It says a
19 degree was awarded in 1980.

20 A. Uh-huh.

21 Q. But it appears that you -- you stopped
22 working -- or you were done with the studies in
23 1975. What happened between '75 and '80?

24 A. I decided I wanted to go to work so I
25 took a job. And as soon as I was gone it got hard

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1 to get them to -- you know, I'd do my part but they
2 wouldn't do their part. And I hope that's on the
3 record. I'll send them a copy of it.

4 Q. Okay.

5 A. So it took till '80 till finally we
6 got all -- the thesis done and approved and so
7 forth.

8 Q. Okay. So essentially from '75 to '80
9 that's when you --

10 A. Yeah.

11 Q. -- defended the thesis or got final
12 approval?

13 A. Yeah. I went back in '80 and -- and
14 defended it and then was awarded it.

15 Q. Okay.

16 A. But in the meantime I was working.
17 Actually, I was at the cancer institute and prior to
18 that I was at the medical center in Denver.

19 Q. How did you get to the cancer
20 institute?

21 A. Car.

22 Q. I knew that was coming. Practice,
23 practice, practice. What caused you to pursue that?

24 A. I was a faculty member at the medical
25 center in Denver, Colorado, and Dick Griesemer who

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1 was the head of the program at NCI offered to have
2 me to come give a seminar. And I don't remember the
3 details of this, whether I knew at that time I
4 was -- I probably knew at that time they were
5 considering me for a job. After the seminar they
6 offered me a job and -- and I took it as a good
7 opportunity for my career to move to the cancer
8 institute.

9 Q. And that's what you did in 1978?

10 A. Yeah. '78 to '80 I was at the cancer
11 institute.

12 Q. What is the toxicology branch of the
13 carcinogenesis testing group?

14 A. At that time the carcinogenesis
15 testing program was the major program in the country
16 that was doing the tests of compounds to see which
17 ones cause cancer. And it was at -- that's the --
18 it was at the cancer institute. And within that
19 organization there were several branches, and
20 toxicology was the branch where the pathologists,
21 veterinarians and toxicologists were that were
22 conducting -- that were the scientific
23 administrators for the government on those projects.
24 And I was in the toxicology branch. There was
25 another branch that -- that looked at statistics. I

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1 can't really remember -- that may have been the only
2 two. I don't remember how many branches there were.

3 Q. When you say compounds though, was
4 there a particular area that they -- that this
5 branch was focusing on?

6 A. Well, when I first got there part of
7 this was the Weisbergers had been at the cancer
8 institute and Elizabeth Weisberger was still there.
9 Her husband had moved from the cancer institute.
10 But they had started a large number of -- of
11 projects to look basically at structure activity
12 in -- in chemicals. So they looked at a lot of
13 chemicals and decided, okay, these have interesting
14 structures, let's see if they cause cancer based on
15 the structure and can we determine based on the
16 structure which compound will cause cancer and then
17 we won't have to test all of them, we can just look
18 at the structure. And they started a large number
19 of these which -- many of which were still in
20 progress when I got there. And Dr. Griesemer was
21 recruited to finish these projects and start -- we
22 were under the -- we were required to start 100 new
23 compounds a year at the time I was there. And so he
24 brought together a team of people to finish up the
25 projects already underway and to start up to 100 if

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1 we could chemicals per year from then on out. And I
2 was there for two years while we did that work.

3 Q. Okay. At --

4 A. And the chemicals that -- I forgot to
5 say that changed at one point because they started
6 picking the chemicals based on did any regulatory
7 agency have a problem with the chemical. So they'd
8 sit around the table and they'd say, does anybody --
9 they had all the agencies represented and they said
10 is there any chemical that you think is a problem in
11 California and they'd say, well, we're worried about
12 this. And then they'd go through a process where it
13 would be handed to us and we'd try to determine on a
14 priority basis which of these chemicals should be
15 studied of the next 100 that we were going to start.

16 Q. None of those tests that you were
17 involved with had anything to do with tobacco
18 product or tobacco smoke?

19 A. We didn't test any mixtures. We tried
20 to test pure chemicals because it's very difficult
21 to test the mixture. And we -- but some of those --
22 I've never gone through -- I've been asked this
23 question and I keep thinking someday I'll go through
24 and see of the many chemicals in there are any of
25 them component. It would be very likely some of

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1 them probably are in cigarette smoke, but we never
2 tested -- we tested the pure chemicals only and it
3 was never in relation to -- to cigarette smoking.
4 It was always in relation to is this pure chemical a
5 problem in the environment for humans.

6 Q. Okay. So as of right now without
7 having done that research you don't think that
8 you've -- you've done any work on compounds that
9 were -- that were in tobacco products?

10 A. It's possible that some of those --
11 it's likely, in fact, because there's a large number
12 of chemicals there and there's a large number in
13 tobacco smoke. So it's possible that -- but it
14 would be very indirectly, as I've said, because I
15 never have -- I have never studied cigarette smoke
16 specifically and -- and I've never studied any
17 mixture of these chemicals. We've always -- we
18 always tried to study the pure chemical.

19 Q. I'm not sure if it's -- and I was just
20 looking around for the reference, if it's the
21 Delaney or Delancy clause.

22 A. Delaney.

23 Q. Delaney clause.

24 A. Uh-huh.

25 Q. Did that have anything to do with the

1 formation or the work that was being done in the
2 toxicology branch?

3 A. I don't believe so. That was in a
4 totally different branch of -- you know, it was
5 totally separate and that was more directed towards
6 compounds in food. Now that doesn't mean that we
7 didn't test potentially a compound that might be a
8 problem in food, but we didn't do it as far as I
9 know -- now I didn't sit in all these meetings where
10 all these people sat. Who knows what their agenda
11 was for studying it, but Delaney was mainly for food
12 additives. So anything you added to food
13 theoretically could not be shown to be a carcinogen.
14 And I think that act's been repealed. I don't know
15 during the time it was in place that, in fact, any
16 chemical was ever banned under that, but there was
17 always continuous debate over should -- should you
18 or shouldn't you put something in the food. It's --
19 it was quite an interesting debate because it's
20 quite interesting if you look at food there's a huge
21 number of carcinogens naturally in food. And so to
22 say you couldn't put one in at a lower concentration
23 than it was already in there already didn't make a
24 lot of sense. And that was a problem with Delaney.
25 Delaney had a zero tolerance to it. But I don't

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1 think the work we were doing -- now when we said a
2 chemical was a carcinogen in a rodent, then that
3 would -- if it were a food additive in any respect,
4 the Delaney clause would kick in and other agencies
5 would have to worry about what to do about it.

6 Q. Okay. It says that you were acting
7 chief of that branch. How -- was that because of
8 retirement or how did that come about?

9 A. Cippy Cueto was there as the chief
10 when I got there and he did retire. And you'd have
11 to ask Dick Griesemer why he made me the acting
12 chief.

13 Q. Did you ever become chief of the
14 branch?

15 A. I was -- no. I left before.

16 Q. And so in 1980 you decided to leave?

17 A. I got an offer to go to CIIT in
18 Research Triangle Park. What happened there is they
19 gave -- that's where they gave us away to NIEHS and
20 we were going to move to Research Triangle Park
21 anyway. So I thought as long as I'm moving I might
22 as well job interview and so CIIT offered me the
23 head of toxicology.

24 Q. You have other academic appointments
25 since then, and just going through them quickly at

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1 North Carolina State University, from '81 to '84 you
2 were not a tenured professor at that time, were you?

3 A. No. I wasn't even on the faculty. I
4 was adjunct and that simply means that you're given
5 a -- a -- you're not -- I wasn't given any salary or
6 anything. I just taught at the school at that time
7 and so they -- they made me a -- it's kind of an
8 honorary type degree.

9 Q. You also did that in 1984 at the
10 University of North Carolina at Chapel Hill?

11 A. That's correct.

12 Q. And from '83 to '84 you were clinical
13 associate professor. That's a paying job, right?

14 A. No.

15 Q. No?

16 A. All three of those -- I was head of
17 toxicology at CIIT, and those were three
18 universities that liked to have me mentor students,
19 or teach or in some way contribute to their program,
20 but none of those, unfortunately, were paying.

21 Q. So your paying job at that time was as
22 head of the CIIT?

23 A. Right.

24 Q. And while you were at CIIT did you do
25 any work in any fashion with respect to issues of

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1 tobacco and health?

2 A. Not directly, no. We did all
3 inhalation research there and -- but it was
4 commodity chemicals for the chemical industry. And,
5 again, some of those may be in cigarette smoke but
6 I've never done the comparison.

7 Q. At Stanford University from '84 to '92
8 did you actually -- were you on the faculty there?

9 A. Yes.

10 Q. Did you -- were you a tenured
11 professor?

12 A. That's where I gained tenure at
13 Stanford.

14 Q. Okay. And while you were --

15 A. Did you see how proud I was to say
16 that?

17 Q. Absolutely. And you should be.

18 A. It's a very difficult place to get
19 tenure and so I was very excited to do that.

20 Q. They -- did you teach while you were
21 at Stanford?

22 A. I didn't teach any classes
23 specifically, but I taught seminars and I taught in
24 other classes. So I taught a few lectures in other
25 classes, but I didn't have my own courses there.

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1 Q. You were there primarily to run their
2 animal laboratory facilities?

3 A. That's correct. And I did research as
4 well. And a lot of what went on in California as
5 well was there was a tremendous animal rights
6 activity at that time.

7 Q. July 1989 was a busy month for you in
8 the press, wasn't it?

9 A. Yeah.

10 Q. You wrote a letter to the editor of
11 the New York Times at that point?

12 A. Right. That ended up in a book.

13 Q. Did it?

14 A. Yeah.

15 Q. Which book that?

16 A. Elements of Argument. It's listed in
17 my CV as well.

18 Q. The -- and your position on -- on that
19 controversy at the time is what?

20 A. Well, I have always been a proponent
21 that animals have to be treated humanely, and that's
22 what I've done all my career. And, unfortunately,
23 the animal rights activists have this zero, we won't
24 let you use any animals for anything philosophy
25 which would be very devastating to research. So

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1 that's basically my position, although I could -- I
2 mean, I've written a lot of stuff if you want me to
3 send you some.

4 Q. You've covered it in other
5 depositions. And then in 1992 you left California
6 and you came to North Carolina State University, is
7 that correct?

8 A. That's correct.

9 Q. Is that the same time that you also
10 were retained by Shook, Hardy & Bacon to consult?

11 A. I was actually retained while I was
12 still at Stanford so I left Stanford sort of middle
13 of the year and I was retained by Shook, Hardy &
14 Bacon in January or February of that year. So I had
15 done some work for them before leaving Stanford.

16 Q. That's purely coincidental?

17 A. That what?

18 Q. That you left California at the same
19 time you started doing this consulting work?

20 A. Yeah. It had nothing to do with --
21 with that at all. In fact, I was -- I thought
22 perhaps I'd no longer have any consulting work after
23 I moved because I thought partially they liked
24 because I was a professor at Stanford and it turned
25 out that had nothing to do with it.

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1 Q. I'm not going to go through the rest
2 of -- of your CV. I just -- again, there's another
3 qualifier here that I want to ask you about. You
4 say there's a partial listing of grant support.
5 And --

6 A. Yeah.

7 Q. -- I'm curious why you've only made a
8 partial list.

9 A. I can't remember any of the rest.

10 Q. Okay.

11 A. And I can't find any documents. I
12 know I have other grants, nothing -- this is all the
13 recent ones, and the ones I'm missing are the
14 earlier ones and I can't find any documentation and
15 I can't really remember enough about it. So I
16 thought it was fair to just put partial there to --
17 to signify there are some others but I can't really
18 find the documentation.

19 Q. None of these grants concern smoke
20 inhalation studies, do they?

21 A. That's correct.

22 Q. Going through your publications. Do
23 any of your publications concern smoke inhalation
24 studies?

25 A. There's -- I've never directly worked

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1 on smoke inhalation, and I've never published
2 anything that directly -- but many of these articles
3 are the same kind of work that would be done. I
4 mean, if you change the chemical or the agent that
5 you're exposing the animal to, it's really the same
6 thing. But I've never used smoke as a -- as a -- in
7 any of my experiments or any of my publications.

8 Q. Technical reports on Page 24. You
9 refer to bioassays as sort of smaller studies that
10 can be very simple studies. Is this the same type
11 of report that you're talking about?

12 A. I confused you there. That's not -- a
13 bioassay simply means that you're using a live
14 animal to assay something. And it -- it doesn't
15 imply longness or shortness. And these are all
16 lifetime carcinogenesis studies of these particular
17 compounds. And you can tell that because it says
18 for possible carcinogenicity in the title. You
19 really can't study carcinogenicity in an unknown
20 chemical unless you do a lifetime study because the
21 tumors generally occur in older age. So these are
22 all lifetime bioassays of -- of each of these
23 chemicals. And then the size of the bioassay can
24 vary even in a long-term study. So where I may have
25 confused you is we only use 50 animals as the test

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1 group as opposed to the MAI study where they use
2 thousands of animals as the test group. So there
3 are -- there can be differences in the size of the
4 bioassay and the length of bioassay. I may have
5 confused you.

6 Q. Okay.

7 A. But these are all lifetime bioassays
8 to determine if these compounds cause cancer.

9 Q. None of those --

10 A. These are all technical reports. This
11 would be the National Cancer Institute equivalent of
12 the Blue Book for each of these chemicals.

13 Q. Okay. But this -- again, none of
14 those technical reports concern smoke inhalation
15 studies?

16 A. No. It's -- as I said earlier, some
17 of the individual chemicals may be a component of
18 smoke, but I've never even looked to see if that's
19 the case. It's almost certain because there's so
20 many things in cigarette smoke and I've studied so
21 many chemicals that probably some of them are in
22 cigarette smoke. Instead of working on my CV I'll
23 do that one of these days.

24 Q. Okay. You've got the time. This is
25 what I'd like to mark as Hamm Exhibit Number 4.

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1 This is actually a more recent list of opinions that
2 you intend to offer in this litigation. I'll let
3 the stenographer mark it.

4 (PLF. EXH. 4 was marked for
5 identification.)

6 BY MR. MIGLIORI:

7 Q. Almost -- first of all, review that
8 and -- and tell me if you've seen that before.

9 A. I have and -- except perhaps for the
10 cover letter, and I may have seen that as well. But
11 just like the other things, I worked on this. I
12 didn't work on the cover letter.

13 Q. Did you actually prepare this
14 disclosure or is this a joint effort as well?

15 A. It -- we do it through the same
16 mechanism as we have a starting point of the
17 previous opinions and then we get together and
18 change everything that -- to update it and to make
19 it current. And we added in here that I had
20 retired. I didn't know whether you got the new
21 CV or not or -- the timing of this is -- I don't
22 worry about it. I let the Shook, Hardy & Bacon
23 staff worry about that.

24 Q. When you say that you start with the
25 most recent and -- and update it, as far as you can

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1 tell is -- is this disclosure or this summary of
2 opinions the most current version?

3 A. Yes.

4 Q. Okay. We've covered nearly all of
5 these points earlier today. I just want to go
6 through and pick up a few more because it's a little
7 more detailed.

8 A. Our intent at least -- I don't think
9 there's really anything new. We just rewrote it in
10 a little more positive format. Instead of taking
11 the negative, we took more of the positive but
12 our -- our intent at least was not to change. I
13 don't think we've changed substantially any of the
14 opinions that were in the earlier one. We've just
15 made it more -- in a more positive way.

16 Q. It stimulated more questions from me.
17 I wanted to ask --

18 A. Well, I guess that's why we should
19 never change anything.

20 Q. Have you ever practiced veterinary
21 medicine?

22 A. Not per se. I ran the pet clinic one
23 day a week while I was in the Army. I was a captain
24 in the Army and I ran the pet clinic on Thursday,
25 and I still don't like to answer the telephone at

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1 home. So I've had very limited -- now I also as a
2 laboratory animal veterinarian have -- as well as
3 working as a pathologist I've worked as a clinical
4 veterinarian, so I've had substantial clinical
5 exposure and -- and work and training with all the
6 laboratory species which can include a wide -- a
7 much wider spectrum than you'd find in clinical
8 practice. So I've had a lot of experience, but I've
9 never really run or worked for a -- like a pet
10 clinic that you'd see on the corner where you might
11 take your dog or your cat, and I'm not qualified to
12 either.

13 Q. On the -- on Page 2 of the -- and I'm
14 just going to refer to the page numbers on the
15 bottom.

16 A. Okay.

17 Q. But on Page 2 of your list of opinions
18 in the second paragraph it says that I still serve
19 as an occasional expert reviewer and site visitor to
20 evaluate animal research projects funded by the
21 National Cancer Institute. When -- you've already
22 testified the last time you think you did that was
23 earlier this spring?

24 A. It's in my CV if --

25 Q. Okay.

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1 that as well.

2 Q. Okay.

3 A. And that's the only company stuff I'm
4 doing right now. But I've in the past, and it's in
5 my CV, I've tried to put in there every time I've
6 consulted with a company and I tried to give a
7 little bit of what I did for each of them.

8 Q. And I note somewhere in your past
9 testimony that you did some teaching in ethics.

10 A. That's correct.

11 Q. Do you consider yourself an expert in
12 the area of ethics?

13 A. No. That's not my area of primary
14 expertise, but I did teach two courses. I taught
15 the professional ethics to the veterinary students
16 and I taught professional ethics to the graduate
17 students and residents, and I taught both of those
18 courses. I -- I served as well on the ethics
19 committee at Stanford for the eight years I was
20 there. And so I've had a lot of exposure to -- I
21 think a lot in that area, I read a lot in that area.
22 I'm aware somewhat of what's going on, but I'm not a
23 professional ethicist and don't -- that is not my
24 area of expertise.

25 Q. Okay.

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1 A. Particularly where it relates to
2 animal ethics I probably am in the expert category,
3 but that's a very specialized is it humane or not
4 type of thing. I've been doing that for 30 years,
5 so I might say I am probably a -- a -- as good an
6 ethicist for that -- the day-to-day use for animals
7 in research, but that's a very narrow expertise.

8 Q. And that's -- that's why we're getting
9 into the questions you were bringing up about your
10 letter to the editor in -- in the New York Times and
11 things like that.

12 A. Yeah.

13 Q. You were talking about the treatment
14 of experimental animals?

15 A. Right. I've written a few
16 publications that relate to that as well that are in
17 my CV. The use of animals for teaching, for
18 example, is a -- has some ethical arguments.

19 Q. Okay. On Page 3 in the third full
20 paragraph you say, in the 1960s CTR placed a heavy
21 emphasis on the attempt to develop an acceptable
22 inhalation model for the study of lung cancer
23 induction with cigarette smoke. On what basis do
24 you describe the emphasis to be a heavy emphasis?

25 A. Well, both the amount of money and

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1 the -- the diversity of projects. They held
2 conferences, they started developing smoking
3 machines, they let a number of contracts that led
4 into eventually the MAI studies. So there was quite
5 a bit of resources and quite a bit of money put into
6 that effort. It may seem like doing one of these is
7 pretty simple, but to do a project like the Blue
8 Book by itself is a tremendously large undertaking.

9 Q. When you say heavy emphasis though,
10 are you saying relative to its other research
11 projects or you're just saying that it was a
12 substantial effort within itself?

13 A. I think I'm saying it's a substantial
14 effort within itself because there -- there was also
15 a lot of other work going on that was completely
16 separate from this.

17 Q. Okay.

18 A. So I'm not implying at all that that
19 other work was of less importance or anything. It's
20 just that there was a very substantial amount put in
21 this direction.

22 Q. And as you sit here today you have no
23 real sense of how much this work in the 60s played a
24 part in all of CTR's research efforts on the issues
25 of tobacco use and health?

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1 MR. MERRITT: I'm going to object to
2 the form of the question.

3 A. I -- I might have to have you -- I'm
4 not sure I got the first part of that.

5 Q. Earlier this morning you said that
6 it's an unanswerable question to say how much of the
7 CTR effort being borne out of the Frank statement,
8 how much of their effort was comprised of the MAI
9 research program.

10 A. I hope -- and I should amend that to
11 say almost unanswerable. Any question is probably
12 answerable if we set some definitions of what --
13 what would we call -- we'd have to define these
14 terms and then we could probably spend a lot of time
15 and we could come up with what percent or --

16 Q. Right.

17 A. But what I was trying to say is it's
18 difficult to set those definitions because -- we get
19 asked this all the time at academic institutions.
20 Tell us how much money is spent on animal-based
21 research. It's very difficult because even in a --
22 let's say a grant from CTR today might have some
23 animal research in it, but it also has some salaries
24 for a graduate student that has some equipment,
25 etc., etc. What part of that grant -- would you

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1 take just the animal part, would you take the total
2 and so forth. So I don't -- I haven't made any
3 attempt to, and it would be very difficult to put an
4 actual sort of figure on -- and so I think heavy is
5 about as best as I can do because to put an actual
6 figure to it of it was a certain percent or so forth
7 is very -- very difficult.

8 Q. You don't know if the MAI funding was
9 1 percent or 40 percent of the CTR overall funding
10 in the 1960s, do you?

11 A. No. Sitting here today -- I didn't
12 really look at it from that as -- I didn't sit down
13 and calculate -- even try to make a calculation of
14 the percent of -- of the effort.

15 Q. And I said the 60s. At any time?

16 A. No, I didn't at any time.

17 Q. So when you say that CTR placed a
18 heavy emphasis on this attempt to create an
19 inhalation model, you're saying that you found their
20 effort to be substantial but not necessarily
21 substantial in relationship to its other research
22 projects? You have no idea how -- how much of an
23 emphasis CTR placed on this study or these studies
24 as compared to all the studies it was funding?

25 MR. MERRITT: Object to the form of

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1 the question.

2 A. I don't mean to -- to disregard what
3 else was going on but, in fact, they did -- if you
4 look at the annual reports, if you look at the
5 number of contracts, if you look at the activity
6 that went on, there was a very substantial effort
7 put into this, very substantial. But that doesn't
8 mean at the same time they weren't also granting
9 grants and that those grants were also an important
10 part of the activity. And I've never tried to put a
11 sort of percent on one or the other. But there was
12 a very substantial effort put here to -- in fact,
13 there would have to be for MAI to do -- the
14 cigarette smoking machine had to be invented first
15 which is a tremendous project to accomplish. So
16 they started in the 60s having conferences to even
17 determine what should be done and how it should be
18 done and -- and work their way forward for several
19 years. And so very substantial resources were put
20 into this. But at the same time very substantial
21 resources were put into the grants program as well.

22 Q. And as you sit here today you cannot
23 say whether or not they put more emphasis on the
24 grant programs?

25 A. I can't, no. And -- and as I've said,

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1 it would be difficult to -- we'd have to define what
2 more emphasis even meant and -- and there would be
3 disagreement among reasonable people what that
4 means.

5 Q. In the same paragraph you say that
6 only a few studies of tobacco smoke had been
7 completed using animal models. And I assume that
8 you're just talking about as of the 1960s and --

9 MR. MERRITT: I'm sorry. What -- what
10 paragraph are you?

11 MR. MIGLIORI: The same paragraph.
12 This is the third full paragraph, the second to last
13 sentence.

14 BY MR. MIGLIORI:

15 Q. At the time only a few studies of
16 tobacco smoke had been completed using animal
17 models. Is that --

18 A. That's correct.

19 Q. Are we on the same page?

20 A. Yeah.

21 Q. Okay.

22 A. There's very few -- partially for the
23 reasons we've discussed it's difficult -- the
24 smoking machine had to be developed and so forth, so
25 it took a very concerted effort to do this. There

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1 were, however, some projects that were attempting to
2 do this that sort of gave hope to them that this was
3 the way to go because there are -- there are some
4 published -- there's five or six published papers
5 during this time period prior to the Blue Book.

6 Q. Do you consider any of those studies
7 that you're referring to in that sentence
8 scientifically meaningful in this area of -- of --

9 A. There are -- in a sense all published
10 information is scientific -- scientifically
11 meaningful, sometimes in a positive way, sometimes
12 in a negative way and sometimes we don't know.
13 There were problems with all of those papers,
14 particularly the numbers of animals and so forth.
15 And the -- the manner of reporting that, you know,
16 each paper has its own set of -- and if you -- well,
17 you don't ever hear it. I remember at this time
18 that there was -- the quality of animal-based
19 research was much different than it became later.
20 So the standards for some of these things, animals
21 had diseases and those kinds of things, were real
22 technical problems. So there were -- the studies
23 were meaningful in that people were attempting to
24 produce lung cancer using a -- various models, and
25 all that data was used as part of the -- the basic

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1 work that followed to -- into this project. And
2 that's where CTR should be commended for saying,
3 okay, let's really put a program together and put
4 some contracts together where we can do the whole
5 thing. We can develop the -- the machines. We can
6 pick the right model and then we can ultimately do
7 the -- the -- a project to see if we really can
8 develop a model.

9 Q. They did all that before they were
10 able to determine a mechanism, though, for lung
11 cancer, isn't that correct?

12 A. We -- we don't know today the
13 mechanism for lung cancer. And -- but -- and
14 that's -- that's an argument, again, people have
15 that -- what can you do in absence. You need the --
16 eventually we're going to have to have the mechanism
17 if we're going to make real progress in preventing,
18 and curing and so forth. But in the meantime
19 somebody has to keep working on these aspects. If
20 we could come up with a model, that might help us
21 find the mechanism. And it's a real problem for
22 comparative pathologists. I'm always working on
23 animal models of human diseases about which we don't
24 know anything. And it really is if you think about
25 it a very difficult process because I'm trying to

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1 create a model for something that we don't know what
2 it is so that we can find out what it is. Well,
3 it's very difficult to model for something that you
4 don't know what it is. So this is -- and at the
5 time -- and they brought together -- they had an
6 outstanding conference and brought together most of
7 the people at the time who really knew about this
8 kind of work and -- and set out some parameters for
9 how should this project be done knowing that we
10 don't -- we don't clearly know what the mechanism
11 is.

12 Q. Page 5 you have a one sentence
13 paragraph, the third paragraph. It says that I have
14 read Dr. Sommer's preface at the beginning of the
15 MAI final report. It appropriately and accurately
16 summarizes the results of the MAI research. Is that
17 your answer to Drs. Kouri and Henry, their concerns?

18 A. That's my answer to their concern that
19 they think it is not appropriate and does not
20 accurately summarize it. I -- I have just the
21 opposite opinion.

22 Q. On the last -- or on Page 7. I guess
23 that's the last -- second to last page. The first
24 full paragraph, the last sentence, I think, it says,
25 for example, Dr. Auerbach's research was funded by

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1 the American Cancer Society; the Leuchtenbergers'
2 work was funded by CTR. Although those
3 investigators published several articles on their
4 inhalation research, the scientific community has
5 not accepted their research as showing that smoke
6 inhalation causes lung cancer in laboratory animals.
7 Is it your testimony that no one in the scientific
8 community has accepted their research as showing
9 smoke inhalation causes lung cancer in laboratory
10 animals?

11 A. Well, you could never testify no one,
12 because you can't speak for everyone. And probably
13 many members of the scientific community are unaware
14 of the details. But I think if someone were shown
15 the projects and explained the details and the
16 reasons why these projects are not accepted, then I
17 think the majority of scientists would agree. But
18 there are always people who have -- that's the
19 beauty of science is there's probably nothing in
20 science that we all agree on.

21 Q. Have you ever read or heard of any
22 scientist in the scientific community that, in fact,
23 has reviewed the material and has agreed with the
24 conclusions of Auerbach and the Leuchtenbergers?

25 A. I -- I don't think so. I don't think

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1 I've read anybody who's said either way on these
2 two. I have at -- at various times throughout this
3 process at deposition and so forth been shown
4 various documents where scientists immediately after
5 these were published believed it, but that was
6 because early on people hadn't heard the problems
7 with the studies. And later I don't think even
8 those -- I didn't see whether later these same
9 scientists recanted or anything. But I have seen
10 immediately after -- now Leuchtenberger I haven't
11 seen too much where anybody said anything either
12 way. But Auerbach I've seen memos where scientists
13 immediately -- and this is typical of science.
14 Immediately after something's published, people
15 generally do believe it and discuss it and so forth.
16 And then people begin to look at the details and --
17 but I don't think even those same scientists writing
18 today or even writing some years later than those
19 particular memos would have agreed that what he
20 found was tumors.

21 Q. Without a mechanism is it fair to say
22 that you would be critical of any research study
23 that was positive for tobacco smoke and lung cancer?

24 MR. MERRITT: Object to the form of
25 the question.

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1 A. No. What happens with any research
2 project -- when anything is published, it's a normal
3 process of science that each person attempts to find
4 why -- the fallacy in the results. But any paper
5 that could withstand criticism and -- and didn't
6 have these problems, then, you know, you'd have to
7 agree with it because that would be the results. In
8 this case that -- that was not the case. Once you
9 see -- you knew with Auerbach's immediately that
10 there were problems if you were -- if you knew about
11 dogs. Control dogs don't get tumors -- lung tumors.
12 It's a very rare tumor and two of his eight dogs had
13 lung tumors in the controls, so that's a red flag
14 immediately that there's something wrong with the
15 diagnosis.

16 Q. Okay. As you sit here today --

17 A. But I'd love it if somebody came up
18 with a model, and people would applaud it, people
19 would be happy to see it so -- but there's a natural
20 cynicism in science that we're -- even with our own
21 work we're trained to -- even when I publish
22 something, I spend most of the time trying to think
23 what are the -- what are the -- all the reasons that
24 what I'm saying could be wrong. And if I can't find
25 a good answer to those questions, then I -- then I

1 don't -- I don't publish it until I do another
2 study. So I think in general scientists do tend to
3 be critical, and cynical and so forth. That's a --
4 that's a standard part of science. But once it
5 withstands critical review, then, you know, it's
6 accepted and becomes a part of the body of
7 knowledge.

8 Q. The last page of this Exhibit Number 4
9 is a list of the testimony that you've provided.
10 And you said that you're in a lot of actions. Right
11 now in the -- do you expect to be testifying in the
12 Engle matter at trial?

13 A. As of today I don't know that I'll be
14 testifying in any trial. I have not been scheduled
15 nor am being readied to -- that I know of to testify
16 in any trial.

17 Q. Okay. You did not testify at the
18 Broin trial?

19 A. I did not. I didn't testify in
20 Minnesota.

21 Q. Do you know why you didn't testify in
22 Minnesota?

23 A. No, I don't. I don't know in any of
24 these.

25 Q. Okay. And --

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1 A. Do you?

2 Q. I have an argument, but I don't know.
3 So are you listed as an expert in any -- in the
4 State of Washington?

5 A. Yes, I am.

6 Q. And are you expecting to testify
7 there?

8 A. I have not been informed at all. I
9 have not been deposed there nor have I been told
10 I'll testify there.

11 Q. Okay. Is the sum and substance of the
12 opinions and the factual testimony that you've
13 provided in these five matters listed on the last
14 page of Exhibit 4 the same today as it was when you
15 provided this testimony?

16 MR. MERRITT: I'm sorry. I don't
17 under -- I'm not sure I understand that.

18 MR. MIGLIORI: I'll rephrase it.
19 BY MR. MIGLIORI:

20 Q. You've testified in these five cases
21 in dep -- in the form of deposition testimony,
22 correct?

23 A. That's correct.

24 Q. Has your testimony or any of the
25 opinions you've expressed in those depositions

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1 changed in any way since you provided that
2 testimony?

3 A. I -- I don't believe so. I think if I
4 were asked the same questions, I would give
5 essentially the same answer. But I can't really
6 sitting here today remember every -- but I don't
7 remember anything in those, and I had a chance to
8 correct mistakes and so forth. And I think if asked
9 the -- well, I might do better. I'm -- I'm getting
10 a little better at remembering some of the -- I made
11 some obvious mistakes in these just because of not
12 being able to think of things, but I don't think my
13 opinions, the principle part of them, has changed
14 from what's in these.

15 Q. The only one of those depositions that
16 you reviewed in preparation for today, though, was
17 your testimony in the Mississippi action, correct?

18 A. That's correct. And that was simply
19 because it was the -- it was your -- your law firm,
20 and I just thought that was the one that was most
21 likely to make some sense to review.

22 Q. I think that was a good decision. In
23 your testimony in March of 1997 do you remember
24 being asked about whether or not you're of the
25 opinion that tobacco smoke causes lung cancer?

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1 A. I was.

2 Q. And do you recall what your testimony
3 was in March of '97?

4 A. I don't specifically, but I do in
5 general.

6 Q. And what was that?

7 A. Well, I have trouble with the word
8 cause as most scientists do, and I'm very
9 comfortable with calling it a significant risk
10 factor because it is one of the very significant
11 risk factors, and I don't think anybody should
12 smoke. But cause to me implies -- I think you have
13 to almost define cause because it isn't a sufficient
14 cause, it isn't a necessary cause. It may be a
15 contributing cause. I could -- I could go with
16 contributing cause. But to me cause kind of implies
17 that you have more knowledge of the mechanism than
18 we -- than we do in this case. And it's sort of a
19 semantic argument and I believe too that people use
20 it as it causes. I don't view that they're
21 incorrect necessarily. I just think it's a very
22 imprecise word.

23 Q. So if somebody were to say today that
24 smoking causes lung cancer, it's your testimony that
25 it's not necessarily incorrect depending on what

1 they mean by cause?

2 A. That's -- that's my testimony. I
3 think when the Surgeon General says that, or writes
4 it on a pack of cigarettes or so forth that I don't
5 think the semantics are quite so important. But as
6 a scientist it's just difficult for me to use cause
7 without defining it because it's such an imprecise
8 term.

9 Q. What about --

10 A. I should just go ahead and use it
11 because everybody else does and then I wouldn't have
12 to keep going through this argument, but to me it is
13 definitely a contributing cause. But it isn't
14 really necessary or sufficient which to me kind of
15 is implicit in the word cause so --

16 Q. Do you -- do you feel that most
17 scientists feel the same way that you do?

18 A. I -- I think, frankly, most scientists
19 have never thought about it and I think prior to '92
20 and getting involved in this I probably never
21 thought about it much either. And I think most
22 scientists would probably say without even thinking
23 about it but if you -- you then study it, think
24 about it, you -- you run into this objection, at
25 least I do, that -- cause to me really means you

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1 really know by what mechanism it's happening. And
2 we don't with cigarette smoke have that. It may not
3 even be that cigarette smoke is carcinogenic. It
4 may be -- it may be an irritant. There may be a
5 number of mechanisms where it's a contributing cause
6 to the incidence of lung cancer in -- in humans so
7 it's a semantic position, but that's why I was a
8 tenured professor. We take a lot of these
9 positions.

10 MR. MIGLIORI: Why don't we take a
11 break so that we can change videotape.

12 VIDEOGRAPHER: This is the end of
13 Videotape Number 2. We're going off the record at
14 2:50.

15 (A recess transpired.)

16 VIDEOGRAPHER: This is the beginning
17 of Videotape Number 3 in the deposition of Thomas
18 Hamm, Jr. We're going on the record at 3:04.

19 BY MR. MIGLIORI:

20 Q. We were just talking about causation.
21 Do you consider yourself an expert in the area of
22 causation?

23 A. No, I don't.

24 Q. Have you read --

25 A. I guess I should qualify that a little

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1 in that I work all the time on models where we're
2 attempting to find the mechanisms of disease and so
3 in a sense -- but I don't even know what an expert
4 on causation would be necessarily. So with that
5 kind of an answer, I'm not -- I don't really view
6 myself a -- a master of the English language or --

7 Q. Could you with your research or with
8 what you do in forming models ever reach the point
9 with a study that you can prove that some agent
10 causes cancer?

11 A. You can. You still have always the
12 semantic problem of defining cause in a sense
13 because most cancers, and the one lung cancer that
14 we're talking about specifically, are probably
15 caused by a variety of things in a variety of
16 combinations under a variety of circumstances. And
17 so if you're -- if you use contributory cause, then
18 you -- you could prove that. There's a few cancers
19 that we might be able to say like helicobacter
20 causing liver cancer. The association is -- is so
21 good and -- and we might be able at some point to
22 agree that -- that it's more than just a
23 contributory cause, that may -- that maybe you have
24 to have the organism to get it in the first -- you
25 know, the other things, necessary, and sufficient

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1 and those kinds of things are fulfilled. But for a
2 complex chronic disease like lung cancer, I think
3 risk factor is a much better way to look at it
4 because we definitely know if you're going to smoke
5 your chances of getting cancer are very much higher
6 and so it definitely is a risk factor and a
7 contributory cause to -- to cancer. But we also
8 know you can get lung cancer and never have smoked
9 in your life.

10 Q. Have you ever read the 19 -- or any of
11 the Surgeon General -- General's reports on tobacco
12 and health?

13 A. I've actually read all of them. And
14 when I read them, I tended to, as I do with most
15 things I read, focus on the animal-based
16 information. And as you know, there's -- which I
17 didn't know. I was quite surprised -- when I asked
18 to send all the Surgeon General's reports to me, I
19 didn't realize how many there were. It's a quite
20 voluminous amount of material. But I have read
21 all -- I've read all of them and I've focused a
22 little more on the animal-based information. And
23 this has been some time ago. I haven't read them
24 recently.

25 Q. Are you familiar with the conclusion

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1 of the 1964 report on the issue of tobacco and lung
2 cancer?

3 A. I -- yes.

4 Q. What is --

5 A. And I -- and I --

6 Q. What is the conclusion?

7 A. As I said earlier, I can understand
8 the Surgeon General in that context using the word
9 cause and not using a semantic -- or -- although, I
10 think even in that '64 version he uses words -- I'd
11 have to go look at it again, but it seems to me like
12 he uses something like contributory cause as well in
13 the -- in the body of it. But it's difficult when
14 you're talking to the public to say here's how we
15 define all the words that we're going to use. But I
16 don't have any trouble with someone saying, nor do I
17 think they're -- they're wrong, I just think they're
18 being imprecise when they say that cigarette smoking
19 causes cancer. It's a contributory cause.

20 Q. When you gave your deposition
21 testimony back in March of '97 in the Mississippi
22 action, you and Attorney Charles Patrick spoke for a
23 while about Dr. Auerbach's studies. Do you recall
24 that exchange?

25 A. I don't recall it.

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1 Q. And he asked you whether or not you
2 had an opinion about whether Dr. Auerbach was able
3 to produce cancer in the smoking beagles. Do you
4 recall that question?

5 A. I don't. I sort of recall that I even
6 had trouble remembering who Auerbach was at that
7 deposition.

8 Q. Okay. Well, then you did say after
9 that, I might have an opinion but I need a little
10 more time to review it than we have right now.
11 Since March of '97 did you go back and review the
12 Auerbach's studies?

13 A. Yes, I have.

14 Q. Okay. And what did you do to review
15 the studies?

16 A. I read them. Well, I had reviewed
17 them at that point as well. I just couldn't
18 remember it at the deposition.

19 Q. Okay.

20 A. But since then I looked back to the
21 information I already had. I've read so many things
22 and there's so many studies, so many people that
23 I -- I had more trouble at that time than I do today
24 remembering Auerbach, but I remember him very well
25 today.

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1 Q. Okay. So as of today then are you
2 able to answer the question or do you have an
3 opinion as to whether or not Dr. Auerbach produced
4 lung cancer in the smoking beagles?

5 A. I don't believe that he did.

6 Q. And what do you base that opinion on?

7 A. Part of the basis is the -- the
8 information I gave you earlier where right away you
9 know there's a problem with the study when you see
10 two of eight control dogs had tumors. And this is
11 an extremely rare tumor so you would expect the
12 controls to be completely negative. And then
13 various people have looked at -- at that -- those
14 studies and very few people are convinced, including
15 the IARC monograph, states that there's trouble with
16 the histopath in that study. It's likely that what
17 he had was either inhalation pneumonia, or lung
18 worms or something like that and he misinterpreted
19 that data. Now I don't know definitively because I
20 have not seen the blocks, been able to make my own
21 slides, form a panel of experts to look and -- and
22 make that decision, and that's what you would
23 definitively have to do to make that determination.
24 But based on what I've seen and what I've -- I've
25 read, I -- my opinion is -- it's particularly based

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1 highly, highly unlikely, but I can't say with 100
2 percent certainty and I don't think anyone can
3 unless we could somehow get ahold of blocks.

4 Q. Did you re-review the commentary of
5 I.W. Hughes with regard to the Auerbach study?

6 A. I didn't specifically, but I remember
7 it. I think -- isn't that a Brown & Williamson
8 document? And that's been shown to me at
9 deposition. And that's the -- the -- one of the
10 scientists I was discussing that early on probably
11 thought that it was a positive study because he
12 hadn't heard the whole story, he had a number of
13 objections to the study, but he was very impressed
14 with how positive it was, but there's an individual,
15 and I don't even know if he's still alive, but I
16 doubt if he knew now -- people experienced with dog
17 studies would right away say, well, there's a
18 problem here if the controls have tumors and that
19 would make it really difficult for a scientist to
20 agree that it was positive. But he did write an
21 early memo where he was pretty impressed with the
22 study.

23 Q. Back in March of '97 you also spoke
24 about the Dr. Homberger study. And at that time you
25 had not reviewed enough or -- you said that you

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1 needed to look into it more. When Attorney Patrick
2 asked you, do you believe Dr. Homberger caused the
3 induction of laryngeal cancer after the inhalation
4 of cigarette smoke by the hamsters, do you -- have
5 you reviewed the Homberger study since then?

6 A. I have.

7 Q. Have you formed an opinion about
8 whether he was able to induce laryngeal cancer after
9 the inhalation of cigarette smoke by the hamsters?

10 A. I have the opinion that he may have,
11 but the opinion is he probably didn't. And there
12 are a number of -- a number of other things that
13 will cause that same lesion. And in his own studies
14 he tried to get it to metastasize and he admits that
15 it never metastasizes so it may or may not be a
16 tumor and -- and I'm willing to accept -- it's
17 another one of those where you'd really have to get
18 the blocks, form a panel, do it right and -- and --
19 and then I'd -- I'd be willing to take that panel's
20 word. That model is still used a slight amount, not
21 very much. And the people who use it today call
22 that squamous -- call it squamous metaplasia so
23 they're not willing to call it cancer but they may
24 not be using the exact same hamster. You know, the
25 conditions of that study were different. A very --

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1 Dr. Sommers who's a very prominent pathologist who
2 viewed -- who did view some of the tissues at the
3 time did not think it was a cancer and that's pretty
4 good evidence, but I'm -- I'm willing -- I don't --
5 I can't say today definitively, but it's my opinion
6 that he very unlikely -- that it's very unlikely
7 that that is a tumor. It probably is a squamous
8 metaplasia that could result from a number of things
9 in the hamster.

10 Q. Since March of '97 did you review any
11 of the work of Dr. Dontenwill?

12 A. I have. I'm not certain of the exact
13 dates. I probably have read all these things even
14 prior to that time and at that -- at that deposition
15 I was so overwhelmed with names, and places and
16 dates but by now it's gotten a little clearer to me.
17 And Dontenwill as well -- he had much smaller
18 numbers. He's the reason really Homberger attempted
19 to do what he did and so he has a similar type
20 lesion and it's debatable it's the same problem.
21 There's a number of problems with the hamster model.
22 But it may be a cancer and it may be a good model
23 for laryngeal cancer, but it's not lung cancer which
24 is what they were attempting to develop.

25 Q. Have you focused since March of '97

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1 any more on laryngeal cancer?

2 A. No, no more essentially than what we
3 just discussed.

4 Q. Have you since March of 1997 reviewed
5 any in-house tobacco research studies?

6 A. No. I have occasionally seen
7 reference to it in various memos and things that
8 have been presented to me at depositions, but I have
9 not as part of my work done anything with any
10 in-house documents and I haven't seen any other than
11 I think I've seen a few like at depositions and so
12 forth.

13 MR. MERRITT: When you say in house,
14 you mean in house to the companies --

15 MR. MIGLIORI: That's right.

16 MR. MERRITT: -- the manufacturing
17 companies, not in house to the CTR?

18 MR. MIGLIORI: That's correct.

19 A. Yeah. That's a good distinction. I
20 always forget because I view CTR as separate from
21 the industry and many people may not. And -- and I
22 have reviewed a tremendous number of CTR in-house
23 documents, but I haven't reviewed any of the tobacco
24 company documents.

25 Q. So you haven't reviewed any documents

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1 with respect to the individual tobacco companies
2 trying to produce -- or looking at producing a safer
3 cigarette?

4 A. No. I've seen discussions of that in
5 trial testimony and those kinds of things, but
6 that's not my area of expertise and I -- I've done
7 nothing to really look into safer cigarettes.

8 Q. Do you have an opinion about whether
9 or not nicotine is addictive?

10 A. Well, it's not my area of expertise
11 and -- but I -- if you want my lay opinion, my lay
12 opinion is that it's difficult for me to believe
13 that it's -- that it's addictive in a sense, and I
14 don't know all the -- if I were in that field,
15 there's probably some criteria for what is and what
16 isn't addictive, and that probably changes over
17 time. But to me it's definitely habituating. But I
18 know too many people who've just quit cold turkey
19 and it doesn't seem to me to be -- but I wouldn't --
20 I don't have any problem with those people who want
21 to say it is because it isn't my area of expertise
22 and I really don't know the rules for what is and
23 what makes something addictive.

24 Q. Do you have an opinion about whether
25 or not nicotine is a drug?

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1 A. Well, it's -- nicotine is a chemical
2 compound that's been known for a long time and has
3 lots of pharmacologic actions, so I think you could
4 call it a drug in a sense, but it's not my area -- I
5 don't even know -- I'd have to think about the
6 definition of a drug. I don't know -- I'll have to
7 go look up in my dictionary the definition of a drug
8 and think about it, but it has many pharmacologic
9 effects and acts in many ways like a drug.

10 Q. I know that you said that you've done
11 a lot of tests with compounds. Do you consider
12 yourself an expert in pharmacology?

13 A. No. I understand -- but I've -- I've
14 just told you I don't know the definition of a drug.
15 That's pretty good evidence I'm not a
16 pharmacologist.

17 Q. I'm sure if I pushed you I'd get you
18 to define drug today without going to your
19 dictionary.

20 A. Well, but would it be right is the
21 problem. You could get me to do it but would it be
22 right?

23 Q. That's always the question. And do
24 you know what the stated purpose is of CTR?

25 A. The stated purpose?

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1 Q. (Nods head).

2 A. It basically is in the -- the
3 initial -- well, some of the many reports as well
4 list what their stated purpose is and to me sitting
5 here today I think of it as their goal was to do
6 high quality research to investigate the
7 relationship between smoking and health.

8 (Off-the-record conference.)

9 BY MR. MIGLIORI:

10 Q. And where did you say that you got
11 that understanding, from reading --

12 A. Well, it starts kind of with the Frank
13 statement and then it moves into the early formation
14 years. And then each of the annual reports kind of
15 has -- early on they have some of their -- why we're
16 here, what we're doing, how we're doing it.

17 Q. Based on what you have reviewed is it
18 your opinion that CTR has lived up to that purpose?

19 A. Yes.

20 Q. And why do you -- on what do you base
21 that opinion?

22 A. Based on they've provided a tremendous
23 body of science on the issue of smoking and health.

24 Q. When you say tremendous body, I think
25 we're going back to your distinctions made earlier.

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1 Are you talking about dollars? Are you talking
2 about studies? Are you talking about grants?
3 What --

4 A. I'm talking about published reports in
5 the peer reviewed literature.

6 Q. And that's with respect to contracts
7 or is that contracts and grants?

8 A. Yes. Generally in a -- when -- when
9 you're evaluating a publication, it's irrelevant
10 whether it was a contract or a grant.

11 Q. But you have focused in your review of
12 this material primarily on the animal-based studies,
13 correct?

14 A. Yes. My area of expertise is
15 animal-based research. And while I have an
16 understanding -- a limited understanding of other
17 areas of research, that's my area of expertise.

18 Q. You didn't focus on and read secondary
19 sources as it related to other scientific research
20 with CTR, did you?

21 A. Secondary sources, no. I did -- I
22 have read the annual reports and I did notice the
23 authors, the journals, the organizations, but I
24 haven't followed up on any of the other aspects.
25 I've -- the only thing I've followed up on is

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1 animal-based studies.

2 Q. So you didn't read any studies, the
3 studies themselves unless it was an animal-based
4 study?

5 A. I read some of the ab -- the abstracts
6 are all provided in the annual reports, but I didn't
7 read any of the total papers and I didn't read any
8 of the secondary papers except on animal-based
9 studies. That was plenty. That's a huge amount of
10 material.

11 Q. So --

12 A. And it's my area of expertise.

13 Q. So when you say that CTR fulfilled its
14 stated purpose, you're really referring to the body
15 of -- of research that you focused on meaning the
16 animal-based studies?

17 A. I'm saying that in a wider sense in
18 that it's obvious when you look at the annual
19 reports that they did a great deal more than
20 animal-based research. And -- and they did lots of
21 studies that were -- that were used by the Surgeon
22 General in the '64 report and so forth. So they
23 contributed a tremendous amount of -- of research.
24 In fact, they did more than that. They -- they
25 supported junior investigators who are now very

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1 prominent scientists in -- in many fields and so
2 they -- they made a very substantial contribution to
3 American science.

4 Q. Is it your testimony that because it's
5 cited in the Surgeon General's report that it is
6 good science?

7 A. Not necessarily, but it's evidence
8 that the Surgeon General thought it was good
9 science.

10 Q. That's your testimony, that if it's
11 included it's because the Surgeon General must have
12 thought it was good science?

13 A. Well, not -- that's kind of overly
14 general in that obviously the Surgeon General
15 doesn't even write those reports, but the committees
16 and so forth that selected the papers that they were
17 going to use to make their assumptions selected many
18 papers that were -- that were funded by CTR.

19 Q. And it's your belief as you sit here
20 today that the references to those papers in the
21 Surgeon General reports were all favorable
22 references?

23 A. I -- I --

24 Q. That that somehow shows that it was
25 good science because it is referenced in the Surgeon

1 General's report?

2 A. Well, in -- in general when you cite a
3 paper it's because you're -- you are accepting that
4 what's in the paper is -- is germane to your
5 discussion. So to that extent -- now I didn't go
6 through and individually look at every paper and
7 decide was the committee right or wrong or -- or --
8 but definitely when I -- when any scientist selects
9 references, it's because it makes a point that he
10 wants to make in -- in his discussion.

11 Q. Do you know what the Committee of
12 Counsel is?

13 A. Roughly. I'm not real -- I'm roughly
14 familiar with it.

15 Q. How do you know what it is?

16 A. I've been shown various memos and so
17 forth mainly at depositions talking about them and
18 I've been asked to tell them what I think of these
19 memos and so forth. Other than that I don't know
20 very much about them.

21 Q. Were you ever asked to look at records
22 relating to the Committee of Counsel by Shook, Hardy
23 & Bacon?

24 A. I don't believe so, no.

25 Q. What is your understanding of what the

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1 Committee of Counsel did for CTR?

2 A. It's pretty --

3 MR. MERRITT: I'm going to object to
4 the form of -- in fact, did you say for CTR at the
5 end?

6 MR. MIGLIORI: I did.

7 MR. MERRITT: Did for CTR?

8 MR. MIGLIORI: Yeah.

9 MR. MERRITT: I'll object to the form
10 of the question.

11 MR. MIGLIORI: I'll strike it.

12 BY MR. MIGLIORI:

13 Q. What is your understanding of what the
14 Committee of Counsel did, period?

15 A. My understanding was that each of the
16 companies had lawyers who've served on this
17 committee. I -- and their functions are a little
18 difficult for me to understand in that I think -- in
19 the things that I looked at it appeared there's no
20 direct connection with CTR or the Scientific
21 Advisory Board. They may have been involved with
22 the -- the studies that were done and the money went
23 through the CTR offices, the so-called special
24 projects. And I thought what happened there was
25 that sometimes -- and I'm not sure if it was that

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1 committee or individuals from that committee
2 suggested to CTR projects that they might want the
3 Scientific Advisory Board to fund. And if the
4 Scientific Advisory Board didn't want to fund them,
5 they became one of the so-called special projects.
6 But it appeared to me they were separate and not
7 part of the other part of CTR which was the
8 Scientific Advisory Board which was funding the
9 grants and contracts that are in the annual reports,
10 and that's basically my understanding of it. And
11 the things I've seen sort of support that.

12 Q. Do you know whether or not the
13 Committee of Counsel had any role in decisions about
14 funding research?

15 MR. MERRITT: Decisions by whom?
16 BY MR. MIGLIORI:

17 Q. Had any role in decisions about
18 funding research, period.

19 A. Other than the ones I've just
20 expressed --

21 MR. MERRITT: Object to the form
22 but --

23 A. Other than the ones I've just
24 expressed where I thought I -- it appeared to me
25 from the things I saw that -- that sometimes they

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1 proposed research which then the Scientific Advisory
2 Board either accepted or rejected and if it was
3 rejected it became a so-called special project.

4 Q. Other than that you have --

5 A. Other than that --

6 Q. -- no understanding of their role with
7 respect to research funding?

8 A. I haven't seen anything in the things
9 I've reviewed where they had any role in the
10 decisions of the Scientific Advisory Board. And
11 I've looked at quite a few things trying to see if
12 any of those kinds of things were happening and I --
13 I really couldn't see any. But the records, as you
14 know, are very fragmented so I can't say for certain
15 what went on. But I saw nothing in the things I
16 reviewed where anything went on -- where they had
17 any role with the Scientific Advisory Board other
18 than what I just said. And I'm not even certain
19 that was the case. That was just in a few memos, so
20 I don't know for a fact because when I was looking
21 at the -- the other side of things I never saw any
22 influence of that group on anything.

23 Q. Were any documents relating to the
24 Committee of Counsel provided to you by Shook, Hardy
25 & Bacon?

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1 A. Not that I'm aware of. I got the
2 minutes of the Scien -- of CTR's Scientific Advisory
3 Board, and I don't think anything was mentioned in
4 there about them. And the internal documents that
5 I -- the documents between Micro and them I don't
6 think any -- I saw anything that was mentioned. And
7 I don't think I've -- the only time I think I've
8 seen such documents was things handed to me at
9 deposition and asking my opinion of -- of an old
10 memo or that kind of thing.

11 Q. What do you know about CTR's special
12 projects?

13 A. Not very much, although I've seen the
14 list that was sent to Waxman and the list of the
15 publications that came out of it and then what I've
16 told you where it's alleged in these memos that --
17 that they tried to get the special projects
18 sometimes -- either they funded them directly or
19 they tried to send them through the SAB. And when
20 that -- when the SAB wasn't interested in -- in the
21 project, then they funded them through CTR through a
22 separate mechanism.

23 Q. Do you know what that mechanism was?

24 A. No. I think that it was the -- it was
25 just administered by the same -- not the Scientific

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1 Advisory Board, but the rest of the CTR had somebody
2 who -- who just administered the awarding of the
3 money, and keeping track of it and so forth. But
4 I -- I don't have -- that's not my area of expertise
5 and I haven't really looked into that, but that's my
6 basic understanding of what these memos allege.

7 Q. Would your opinion about the quality
8 of CTR research be at all affected by this mechanism
9 that you're talking of funding these projects, these
10 CTR special projects?

11 MR. MERRITT: Object to the form.

12 A. I -- my -- I have thought of it in
13 that context and I see no problem with -- just like
14 the National Cancer Institute. A lawyer can say
15 we'd like you to do -- I told you we had a bunch of
16 people sit around a table from all the agencies. I
17 don't know how many of them were lawyers who
18 selected chemicals for our studies. And then it was
19 our job as scientists to decide do we agree with the
20 decision, should we do it and are we going to fund
21 it. And I don't have any -- I don't have any real
22 problem with anyone suggesting science and qualified
23 scientists deciding is it worth doing and then other
24 qualified scientists doing it. So I really don't
25 have any problem with that.

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1 Q. So it's your opinion then that as --
2 from what you know about CTR's special projects, you
3 have no problem with it?

4 A. As for what I know I have no problem
5 with it. And I've attempted to tell you what I know
6 in as -- realizing I don't know very much.

7 Q. Okay.

8 A. But what I know I have no problem with
9 it.

10 Q. And --

11 MR. MERRITT: Just as an aside --

12 THE WITNESS: Oh, I'm rocking again.

13 MR. MERRITT: -- if you rock, you may
14 be going in and out of focus.

15 THE WITNESS: I'm sorry. I'm sorry.
16 That's my bad back telling me to keep moving.

17 BY MR. MIGLIORI:

18 Q. Do you want to take a break or --

19 A. No. I'm fine. I'm sorry. I just --
20 I don't realize I'm doing that.

21 Q. Are you familiar with special
22 accounts?

23 A. It's kind of -- to me it's the same
24 kind of thing, so I may not have it in my mind
25 right. But to me it was the same kind of -- it was

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1 the same kind of thing. It was just another -- it
2 was an account separate that -- I thought it funded
3 the special projects. So if that's incorrect, I
4 really don't know the difference.

5 Q. As far as -- or based on the knowledge
6 that you have about special accounts, you don't have
7 any problem with special accounts?

8 A. I don't have any problem with anything
9 that I've reviewed and -- and it's very common in
10 organizations to have things like this happening and
11 it's -- as -- as long as the Scientific Advisory
12 Board is picking the projects, I don't really have
13 any trouble with who suggests them or who funds
14 them.

15 Q. I'm a little confused. You told me
16 that it's your understanding about CTR's special
17 projects that the SAB was rejecting them and that
18 somebody else was picking these projects.

19 A. Yeah. I don't have any problem with
20 that either.

21 Q. Okay.

22 A. If -- if the SAB wanted to reject them
23 and so that money was not going to be used, if a
24 company wanted to go ahead and fund it anyway, I
25 don't have any problem with that either. The

1 companies in my mind have the right to go ahead and
2 fund any research they want to fund. And I don't
3 think by sending it through the CTR that made any
4 compromise of the CTR. It was a mechanism as far as
5 I can see just to administer the funds. And so they
6 could have done it directly and not involve the CTR
7 or they could have done it this way, and I don't
8 have any problem with that.

9 Q. Do you know how the SAB members were
10 compensated?

11 A. I have seen some -- I haven't kept it
12 in mind. They got some kind of a fee for each
13 meeting and -- plus travel which is pretty routine.

14 Q. Have you --

15 A. And I remember at one time I tried to
16 find -- I even found out how much, and it wasn't
17 very significant.

18 Q. Do you know whether SAB members also
19 received in addition to that a fee that you've
20 described --

21 A. Not that I know of.

22 Q. -- research money?

23 A. Some of the SAB members did have
24 research projects as well, but not all of them did.
25 But some did.

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1 Q. Do you know whether any of the
2 institutions that any of the SAB members worked for
3 or were affiliated with received CTR funding at the
4 same time that they were members of the SAB?

5 A. I think some did, and that's very --
6 you know, members of study section at NIH also have
7 grants from NI -- that's very common in science, and
8 there are mechanisms to avoid conflicts of interest.
9 I remember one of the Scientific Advisory Board
10 resigned because he was pissed off because he didn't
11 get any money for his grant so there were people who
12 did get funded while they were members and that's a
13 very common thing in science.

14 Q. When you say --

15 A. It's very hard to get reviewers to
16 review something in an area that aren't the top
17 people in the area and so they are very competitive
18 for some of the same grants, and that's a very
19 common thing.

20 Q. What are the mechanisms that you're
21 referring to to avoid conflicts of interest?

22 A. Well, like when you're discussing that
23 person's research, you make them leave the room and
24 those kinds of things. They don't get to vote on
25 their own projects, those kind of things. That's

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1 very common. When I'm at the study section at NIH
2 somebody's always leaving the room because we're
3 talking about something that they're either doing or
4 they're affiliated with so it's very common in
5 science. So that's why it didn't -- it didn't
6 bother me any.

7 Q. Do you know whether or not CTR
8 implemented those mechanisms to avoid conflicts of
9 interest?

10 A. I don't, but knowing the individuals
11 who sit at those, it would surprise me if they
12 didn't because this is very common, but I don't know
13 for a fact. I didn't go back to look to see if they
14 made them leave the room or not, but knowing the
15 people at the table, that's the common procedure so
16 I would assume that happened. Even if it didn't
17 happen, scientists are the -- are -- would have no
18 trouble not funding your grant. In fact, they'd
19 delight in it. If you had a lousy proposal, they'd
20 love telling you about it. So they'd love having
21 you sitting there and it's probably for the person's
22 own ego just to send them out of the room so they
23 don't have to hear it.

24 Q. Did -- do you feel that the tobacco --
25 individual tobacco companies through CTR placed

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1 public health as a paramount concern above all other
2 matters? And, of course, I'm referring to the Frank
3 statement.

4 A. Right. I know you are.

5 MR. MERRITT: I'm going to object to
6 the form of the question.

7 A. I don't have any way to know that.
8 And I can give you a lay opinion. I think they made
9 a very concerted effort to do a lot of good science.
10 And it would be arguable if that's the utmost
11 para -- you know, you could take all kind -- it's --
12 it's an unknowable for me. I don't know.

13 Q. Did you look at any of the CTR
14 documents in light of the issue of whether they were
15 cooperative with government officials in the -- in
16 respect to tobacco and health?

17 MR. MERRITT: Object to the form of
18 the question.

19 A. I didn't look at documents
20 specifically for that reason. That's not my area of
21 expertise, but I did notice tremendous cooperation.
22 In fact, it was very refreshing cooperation for the
23 tobacco working group of the government was -- quite
24 a few of the members were from industry. And I
25 thought it was a very healthy thing that at a point

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1 in time in our history we had industry and
2 government and everybody working together on a
3 problem. So there was tremendous cooperation.
4 There was tremendous cooperation with -- when
5 information was needed and so forth. So --
6 especially the tobacco working group of the
7 government. It's sad, in fact, that we don't have
8 that kind of cooperation going on today.

9 Q. So it's your opinion then that there
10 was tremendous cooperation?

11 A. At -- at the time the tobacco working
12 group was going on it was a very concerted effort by
13 government and industry working together to try to
14 come up with things that would ameliorate the health
15 problems of smoking. And there were industry --
16 quite a few industry people on those -- I was quite
17 surprised how many were on those committees.

18 Q. Are you familiar with the research
19 funding between the AMA and the tobacco industry?

20 A. No. I don't know -- I don't know
21 anything about that.

22 Q. Have you ever heard of the AMA I think
23 it's ERF program?

24 A. I don't -- sitting here today it
25 doesn't ring any bells.

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1 MR. MIGLIORI: Can we take a break?

4 (A recess transpired.)

7 BY MR. MIGLIORI:

8 Q. Okay. I don't have very much more..

9 It's getting late in the day and I'm going to start
10 rocking in my chair soon so -- but I did have a
11 couple questions for you. Do you feel that the
12 tobacco industry has an obligation to sell a safe
13 product?

14 MR. MERRITT: Object to the form of
15 the question.

16 A. I think all organizations should do
17 their utmost to sell the safest product they can.
18 Many products aren't safe, however, and that's why I
19 put in the safest that you can.

20 Q. Do you feel that the tobacco industry
21 including CTR has put out the safest product they
22 can?

23 MR. MERRITT: Object to the form of
24 the question.

25 A. It -- it's really not my area of

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1 expertise and I haven't really -- I've reviewed the
2 animal studies. Based on what I've reviewed I think
3 they made a very concerted effort to find an animal
4 model that would have greatly facilitated their --
5 their attempts. I believe that all industries,
6 including the tobacco industry, do the best they can
7 to try to come up with the safest product they can,
8 but I don't have any insight and I don't have any
9 information and it's not my area of expertise.

10 Q. Okay. In answering this question,
11 though, now you're limiting yourself to the animal
12 studies which is your expertise. And I just want to
13 make sure I understand. You consider yourself an
14 expert on animal studies conducted by CTR, correct?

15 A. Yeah. I'm an expert on animal studies
16 regardless of who --

17 Q. Right.

18 A. -- conducts them.

19 Q. Okay.

20 A. Including CTR.

21 Q. But your testimony, I should say, with
22 respect to this litigation is limited to your view
23 of animal studies?

24 A. Basically.

25 MR. MERRITT: I'm going to object to

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1 that. His testimony in this litigation is defined
2 by the disclosure statements that we filed, but he
3 can give his understanding of what that's going to
4 be.

5 A. I'm going to answer the questions I'm
6 asked and there are a variety of things that I know,
7 but I -- I have not studied the industry's attempts
8 to make their product safer other than I've really
9 focused on the animal aspect of it, and that's where
10 I have the most expertise.

11 Q. So when you answer the question about
12 whether they've produced the safest cigarettes,
13 you're basing that primarily on your view of the
14 animal studies that were funded by CTR?

15 A. I'm trying to express that I really --
16 it isn't my area of expertise. I haven't looked
17 into all the things they've done to -- to produce
18 cigarettes and so forth. I know as a -- as a
19 citizen because we're all exposed to it, they
20 attempted to filter it, they attempted to reduce the
21 nicotine. They attempted to do a number of things
22 that the government thought was an appropriate thing
23 to do. But other than that, I'm not an expert on
24 cigarettes or -- or what -- all the things the
25 industry has done.

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1 MR. MERRITT: And just so the record
2 is clear, we're not going to offer him as a witness
3 on safer cigarettes, or cigarette design or those
4 sorts of things.

5 MR. MIGLIORI: Right. No.

6 BY MR. MIGLIORI:

7 Q. I just -- you said that you feel that
8 all industries have an obligation to produce the
9 safest cigarette -- I'm sorry, the safest product
10 that they can, correct?

11 A. I do.

12 Q. Okay. Do you know what Hill &
13 Knowlton is?

14 A. It's another -- I should, and I've
15 read -- they were involved and were a firm in New
16 York that was involved with the early establishment
17 of -- of the Tobacco Industry Research Group.

18 Q. Do you know what that involvement was?

19 A. And -- and unless I'm confusing them
20 with someone else, they are the -- they provided
21 office -- it was their -- in their offices
22 originally and they provided some staffing and -- as
23 I remember it, but I could be wrong. And they --
24 they may have provided some of the press releases
25 and so forth.

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1 Q. Do you know if they played a role at
2 all in the formation -- the literal formation of the
3 TIRC?

4 A. I can't -- if I'm not confusing them
5 with someone else, they -- they were involved with
6 the original setting up the meeting and bringing the
7 companies together to discuss the Frank statement
8 and so forth, but I may be confusing them with
9 another firm. There were different firms involved
10 along the way early in the organization. And if I'm
11 not confusing them, they were the original ones
12 that -- that did the things that I've expressed.

13 Q. Have you ever heard of the gentlemen's
14 agreement?

15 A. I've heard of it basically in
16 depositions and various -- again, various documents
17 have been given to me to respond to -- to the
18 so-called gentlemen's agreement. I did not see that
19 in any of the things I primarily reviewed.

20 Q. Well, did you see it in anything other
21 than what was presented to you at depositions?

22 A. I don't believe so.

23 Q. No one from Shook & Hardy -- Shook,
24 Hardy & Bacon provided you with any documentation
25 relative to the gentlemen's agreement?

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1 A. And I've said this earlier today, that
2 they didn't, but sometimes when things were
3 presented to me at deposition then Shook, Hardy &
4 Bacon sent me my deposition and my -- the documents
5 that were with my deposition. So in that respect
6 Shook, Hardy & Bacon -- but Shook, Hardy & Bacon has
7 never sent me these things in advance of them being
8 presented to me and they -- they've come to me as
9 part of my depositions, I believe. I've read so
10 many documents that I don't want to say anything
11 that's definitive that this has never happened or
12 that's never happened, but I do not think a
13 gentlemen's agreement -- because it related to the
14 in-house testing, and that's not an area that I have
15 done any investigating. But I have seen memos and
16 so forth and I'm aware of what people think the
17 so-called gentlemen's agreement is and so forth
18 based on things handed to me at depositions.

19 Q. When you said it was related to
20 in-house, how do you understand a gentlemen's
21 agreement to be related to the in-house testing?

22 A. It's alleged -- I've never seen
23 convincing proof, but it's been alleged in various
24 memos that the gentlemen's agreement was that we
25 won't do in-house whole animal testing of our

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1 products and that we'll do that outside and that's
2 my total understanding of the gentlemen's agreement.

3 Q. Do you know when a gentlemen's
4 agreement was alleged to have begun?

5 A. No. I don't know, in fact, that it
6 ever did. As I said, I've only seen in a few memos
7 where people alluded to it. I don't have any basis
8 for saying it ever happened, or it ever was or that
9 this wasn't some kind of thing that the memo writer
10 used to express some kind of an agreement. So I
11 don't know, in fact, that the agreement ever
12 existed.

13 Q. But you're aware of the allegation
14 that it had to do -- something to do with in-house
15 testing, meaning industry -- tobacco company
16 in-house testing?

17 A. Yeah. I'm aware that it's alleged
18 that the gentlemen's agreement was that we won't do
19 in-house whole animal testing and that we'll do that
20 out -- outside of our individual companies.

21 Q. And you've already testified that you
22 haven't reviewed any documents of in-house whole
23 animal biological testing?

24 A. Almost none include -- and any that I
25 may have were, again, presented to me as part of a

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1 deposition. It hasn't been my role to investigate
2 the in-house testing at all. I've been focusing on
3 the external and -- and specifically on the CTR
4 funded and related studies.

5 Q. Are you interested in whether or not
6 the individual tobacco companies conducted in-house
7 whole animal biological testing?

8 A. Believe me, I have plenty to do with
9 what I'm trying to do just on the aspect that I'm
10 doing. So I -- I don't know if I'd even have time
11 to do that additional work.

12 Q. Does it relate at all to what you're
13 doing as far as CTR?

14 A. I don't even know what it is, so it's
15 hard to tell how it relates. But it isn't necessary
16 for me to know what's going on in the companies for
17 me to evaluate what was going on at CTR or what's
18 going on in -- in the general scientific community.
19 This is very typical of all industries. When I was
20 at the Chemical Industry Institute of Toxicology I
21 was unaware and had no access to any of the research
22 that was being done at any of the chemical
23 companies.

24 Q. Well, you were interested and you
25 followed up on all CTR whole animal testing,

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1 correct?

2 A. I don't know what you mean by I
3 followed up on all --

4 Q. You've reviewed those?

5 A. I reviewed, and investigated, and read
6 the papers and so forth for all CTR-funded research.

7 Q. And you've asked to see the Surgeon
8 General's report and you've looked at all the other
9 references to whole animal testing throughout those
10 reports as well, correct?

11 A. I've looked at all published
12 information. I haven't looked at -- even with many
13 of these other -- like the cancer institute, I
14 didn't look into their individual documents or what
15 other things they were doing. In fact, I didn't
16 look into the intramural cancer studies other than
17 those that are published in the open literature.
18 And that's pretty typical in science is we -- we
19 tend to work with what's published and that's the
20 key evidence that we have. Then we -- we can look
21 at other things that relate to that if we think it
22 will help us. So like internal documents between
23 MAI and CTR helped me understand some of the things,
24 but if the Blue Book had never been published -- and
25 if it's never published it's very difficult it

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1 evaluate it. And that's very typical of all
2 industries. Most of the industries, their in-house
3 testing is not available to anybody except in-house
4 scientists. Now I guess I should fix that a little
5 bit by saying a lot -- some of the in-house stuff is
6 probably published, and I may have reviewed
7 published information. And I don't take a lot of
8 time figuring out who -- whether it was in house, or
9 out house, or CTR or whatever in -- in every case.
10 So it's possible I've read some studies that were
11 done in house but they're in the published
12 literature. I haven't read any -- I haven't read
13 any in-house stuff that isn't published.

14 Q. Have you reviewed any of the industry
15 documents from B&W, Brown & Williamson?

16 A. Only as they've been given to me as
17 part of depositions, and there have been a number of
18 those documents given to me.

19 Q. Did you review them through any of the
20 JAMA articles?

21 A. I have seen the publication in -- in
22 JAMA that was the -- based on -- or allegedly based
23 on the Brown & Williamson documents.

24 Q. Are you aware of -- of the criticism
25 of CTR that its research philosophy of funding was

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1 directed more at etiology and not at actually
2 focusing on the mechanism or what cause -- whether
3 or not smoking causes lung cancer?

4 A. I've heard a number of objections.
5 I've seen memos and so forth even from industry,
6 again, during depositions. I really don't agree
7 with that position, and I think it's very difficult
8 to characterize a piece of research as being,
9 especially for nonscientists, important or
10 unimportant or focused, or not focused or
11 mechanistic or applied because as I view the
12 articles in there that -- that what they're working
13 on is trying to attempt to find the mechanisms and
14 that's what's important to understanding this
15 disease. So you've had some of the greatest
16 scientists on the planet doling out money to the
17 highest grants they've got. Pretty difficult to
18 criticize that you didn't get what you wanted.

19 Q. Are you of the opinion that the CTR
20 research that you have reviewed was relevant to the
21 stated purpose of CTR?

22 A. Yes. I believe it was.

23 Q. Have you spoken with any other experts
24 identified by the defendants in the State of
25 Oklahoma or in any other jurisdiction with regard to

1 your testimony?

2 A. No.

3 Q. Have you spoken with any experts
4 designated by the plaintiffs in any jurisdiction
5 relative to your testimony?

6 A. No.

7 Q. Have you kept your time -- your -- for
8 the consulting work you've done for Shook, Hardy &
9 Bacon since March of 1997?

10 A. Yes.

11 Q. Is that time documented?

12 A. It's documented in that each month I
13 send a bill for my time and I get a check back.

14 Q. What is your --

15 A. And I think till '77 (sic). I forget
16 which of these -- we gave some of those.

17 Q. You referred to some of them in your
18 March '97 deposition, some billing records or
19 something. I don't have any in front of me here.
20 How much time can you estimate that you've put into
21 consulting for Shook, Hardy & Bacon -- Bacon since
22 March of 1997?

23 A. It's very hard to estimate because it
24 varies tremendously. So some weeks it's 0; some
25 weeks it may be 40 or 50 hours. I would say in

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1 '7 -- these are estimates. I -- I don't really look
2 at it and I don't keep it in my head. I would say
3 for '77 I worked probably an average of probably 50
4 hours a month.

5 Q. For '97?

6 A. For '97. Oh, wait a minute. Yeah.
7 '97.

8 Q. You worked, I'm sorry, on average of
9 50 hours a month?

10 A. That would be my guess. I'm not
11 certain that's correct. And then '98 some months
12 I've worked more than that and some I've worked much
13 less. And I don't know offhand what -- what the
14 numbers are.

15 Q. Have you worked less in '98 on average
16 than in '97?

17 A. I think in total I've worked more.
18 Some months -- like this month I've had to work
19 quite a bit because of getting ready for the
20 deposition, and reading things and so forth. So
21 this month would be higher than -- than 50 a
22 month -- 50 hours. It may be as -- I've had months
23 that were perhaps as high as maybe 200 hours and
24 I've had months that were very low, and I don't know
25 what the average is.

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1 Q. How much do you get paid currently per
2 hour working as a consultant for Shook, Hardy &
3 Bacon?

4 A. I charge \$250 an hour for reading
5 materials and I charge 350 an hour for meetings and
6 depositions. And I charge 450 an hour if I ever go
7 to trial, but I haven't gone to trial yet.

8 Q. Do you know how much money you have
9 made -- do you know how much money you made in 1997
10 doing consulting work for Shook, Hardy & Bacon?

11 A. I honestly don't. I -- I -- I could
12 estimate that I made -- well, I made -- what's --
13 I've got to do the math. What's 50 times 12 times
14 250? That's about what I made -- I would estimate I
15 made in -- in '97.

16 Q. Okay. Would that --

17 A. I'm involved in a lot of trials and a
18 lot of depositions and so it adds up to quite a few
19 hours.

20 Q. And that would be even more on average
21 for 1998?

22 A. I -- I think so.

23 Q. Have you ever smoked?

24 A. I'm classified as a nonsmoker. I've
25 smoked about six cigarettes in my life. Well, I

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1 haven't even finished six. I've started about six
2 cigarettes in my life.

3 Q. So you've smoked probably four and a
4 half since March of '97 when you said that you
5 smoked one and a half cigarettes?

6 A. It's hard to estimate, but it's a very
7 small number. I haven't smoked any since 1977. I
8 haven't smoked any cigarette since I was about --
9 probably in college.

10 Q. Why not? Have you -- you've tried it?

11 A. Probably the -- I don't know the
12 reasons. The major one probably being is my parents
13 were very antismoking which didn't work on my
14 brother and sister. They've -- they smoke several
15 packs a day for their life. My brother recently
16 quit. But I'm -- I'm a real follower and my folks
17 were very antismoking and that's because in the 50s
18 we had all this information that it was bad for your
19 health. So I was trained from the time I can
20 remember that cigarettes will kill you. And I'm the
21 kind of person -- I wear my seat belt. I -- I take
22 my vitamin. I mean -- so that's probably why I'm
23 not a smoker. I also find it a tremendously
24 disgusting habit. I can't stand -- I don't know
25 whether it's -- it's because of my background or

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1 what, but I can't stand to hardly be in a room with
2 a smoker. I mean, even in an outdoor stadium if
3 someone's smoking, I just find it smells, it -- it
4 doesn't -- I never had any of the benefits from it
5 so however many cigarettes I smoked, all I did was
6 cough. So those factors and then as a scientist
7 you'd find -- my freshman class in veterinary
8 school, a very large proportion smoked when we began
9 and only one was still a smoke -- one or two were
10 smokers when we finished because of our training
11 where we -- we learn about cancer and so forth. Now
12 that doesn't mean there aren't a lot of
13 professionals who smoke, but it was very striking in
14 my veterinary class that everybody quit.

15 Q. Do -- you said that you read all of
16 the Surgeon General reports?

17 A. Well, yes, but it's an exaggeration.
18 You know, there's -- that's a voluminous amount of
19 material so to say I'm very conversant with any of
20 it is -- is an exaggeration. I did read all of them
21 and I -- I focused in on certain things. It's been
22 some time ago, but I did read all of them.

23 Q. Are you aware that in 1979 Surgeon
24 General Julius Richmond concluded that smoking was
25 the number one preventable cause of death in

1 America?

2 A. I remember words somewhat to that
3 effect. Remember, I was at the cancer institute at
4 this time as well, and there was a tremendous
5 antismoking campaign. Each of us was supposed to
6 adopt a smoker and try to help them quit and so
7 forth, so that -- this was at a time when there was
8 a lot of that kind of information available.

9 Q. Do you --

10 A. I don't know if that's, in fact, true.
11 If you look at diet -- there's dietary things.
12 There's pharmaceut -- you know, taking prescription
13 drugs. There's a lot of things that we could do to
14 prevent problems -- health problems in our society
15 that might be somewhat equal, but I definitely don't
16 advocate anybody smokes. And if they do, they
17 should smoke absolutely the least amount they can.
18 Like six in a lifetime would be about right.

19 MR. MIGLIORI: I appreciate your
20 patience today. That's all I have.

21 MR. MERRITT: Okay.

22 VIDEOGRAPHER: We're going off the
23 record at 4:16.

24 (WHEREUPON, the deposition was
25 concluded at approximately 4:16 p.m.)

ROBERTS & KIDWELL, INC.

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SIGNATURE OF DEPONENT

2

I, the undersigned, THOMAS E. HAMM,
JR., DVM, PH.D., do hereby certify that I have read
the foregoing deposition and find it to be a true
and accurate transcription of my testimony, with the
following corrections, if any:

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PAGE	LINE	CHANGE	REASON
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THOMAS E. HAMM, JR., DVM, PH.D. Date

ROBERTS & KIDWELL, INC.

1 CERTIFICATE OF REPORTER

2 I, Lisa A. Johnson, Registered

3 Professional Reporter and Notary Public for the

4 State of North Carolina at Large, do hereby certify:

5 That the foregoing deposition was

6 taken before me on the date and at the time and

7 location stated on Page 1 of this transcript; that

8 the witness was duly sworn to testify to the truth,

9 the whole truth, and nothing but the truth; that

0 the testimony of the witness and all objections made

1 at the time of the examination were recorded

2 stenographically by me and were thereafter

3 transcribed by computer-aided transcription; that

4 the foregoing deposition as typed is a true,

5 accurate, and complete record of the testimony of the

6 witness and of all objections made at the time of

7 the examination.

18 I further certify that I am neither
19 related to nor counsel for any party to the cause
20 pending or interested in the events thereof.

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ROBERTS & KIDWELL, INC.

Lisa A. Johnson
Registered Professional Reporter
My commission expires 6/7/2003

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